=> [redacted]

(FILE 'HOME' ENTERED AT 14:44:00 ON 02 NOV 2005)

FILE 'ZCAPLUS' ENTERED AT 14:44:13 ON 02 NOV 2005
E US2004-506309/APPS
E WO2003-JP02563/APPS
E WO2003-JP2563/APPS

FILE 'HCAPLUS' ENTERED AT 14:45:18 ON 02 NOV 2005
L1 1 SEA ABB=ON PLU=ON WO2003-JP2563/APPS
D SCAN
SAVE TEMP L1 FRE309HCAAPP/A

FILE 'STNGUIDE' ENTERED AT 14:45:51 ON 02 NOV 2005

FILE 'HCAPLUS' ENTERED AT 14:45:57 ON 02 NOV 2005
D IBIB ED AB IND

FILE 'STNGUIDE' ENTERED AT 14:45:57 ON 02 NOV 2005

FILE 'WPIX' ENTERED AT 14:47:02 ON 02 NOV 2005
L2 1 SEA ABB=ON PLU=ON WO2003-JP2563/APPS
SAVE TEMP L2 FRE309WPIAPP/A

FILE 'REGISTRY' ENTERED AT 14:47:35 ON 02 NOV 2005

FILE 'HCAPLUS' ENTERED AT 14:47:41 ON 02 NOV 2005
L3 TRA L1 1- RN : 18 TERMS

FILE 'REGISTRY' ENTERED AT 14:47:44 ON 02 NOV 2005
L4 18 SEA ABB=ON PLU=ON L3
SAVE TEMP L4 FREI309REGAPP/A FRE309REGAPP/A
D SCAN

FILE 'STNGUIDE' ENTERED AT 14:48:41 ON 02 NOV 2005

FILE 'LREGISTRY' ENTERED AT 14:49:43 ON 02 NOV 2005
L5 STR
SAVE TEMP L5 FRE309RXN/Q

FILE 'STNGUIDE' ENTERED AT 14:58:06 ON 02 NOV 2005

FILE 'LREGISTRY' ENTERED AT 15:08:28 ON 02 NOV 2005
L6 STR

FILE 'REGISTRY' ENTERED AT 15:15:06 ON 02 NOV 2005
L7 1 SEA SSS SAM L6
D SCAN

FILE 'STNGUIDE' ENTERED AT 15:15:47 ON 02 NOV 2005

FILE 'LREGISTRY' ENTERED AT 15:17:12 ON 02 NOV 2005
SAVE TEMP L6 FRE309P1/Q

FILE 'STNGUIDE' ENTERED AT 15:17:38 ON 02 NOV 2005

FILE 'REGISTRY' ENTERED AT 15:17:49 ON 02 NOV 2005
D SCAN L4

```
     FILE 'LREGISTRY' ENTERED AT 15:18:48 ON 02 NOV 2005
L*** DEL        STR L6
L8              STR L6

     FILE 'REGISTRY' ENTERED AT 15:31:14 ON 02 NOV 2005
L9            1 SEA SSS SAM L8
              SAVE TEMP L9 FRE309P2/Q

     FILE 'LREGISTRY' ENTERED AT 15:31:50 ON 02 NOV 2005
L*** DEL        STR L5
L10             STR L8
              SAVE TEMP L10 FRE309RXN2/Q

     FILE 'REGISTRY' ENTERED AT 15:38:55 ON 02 NOV 2005

     FILE 'CASREACT' ENTERED AT 15:39:01 ON 02 NOV 2005
L11           0 SEA SSS SAM L10 (     0 REACTIONS)

     FILE 'STNGUIDE' ENTERED AT 15:39:27 ON 02 NOV 2005

     FILE 'LREGISTRY' ENTERED AT 15:40:00 ON 02 NOV 2005
L12             STR L9

     FILE 'REGISTRY' ENTERED AT 15:43:32 ON 02 NOV 2005
L13           1 SEA SSS SAM L12
              D SCAN

     FILE 'LREGISTRY' ENTERED AT 15:44:19 ON 02 NOV 2005
              SAVE TEMP L12 FRE309P3/Q

     FILE 'STNGUIDE' ENTERED AT 15:44:56 ON 02 NOV 2005
              D SAVED


     FILE HOME

     FILE ZCAPLUS

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     FILE COVERS 1907 - 2 Nov 2005  VOL 143 ISS 19
     FILE LAST UPDATED: 1 Nov 2005  (20051101/ED)

     New CAS Information Use Policies, enter HELP USAGETERMS for details.

       This file contains CAS Registry Numbers for easy and accurate
       substance identification.

     FILE HCAPLUS

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```

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FILE COVERS 1907 - 2 Nov 2005 VOL 143 ISS 19
FILE LAST UPDATED: 1 Nov 2005 (20051101/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE STNGUIDE
FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Oct 28, 2005 (20051028/UP).

FILE WPIX
FILE LAST UPDATED: 1 NOV 2005 <20051101/UP>
MOST RECENT DERWENT UPDATE: 200570 <200570/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE, PLEASE VISIT:
http://www.stn-international.de/training_center/patents/stn_guide.pdf <<<

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE http://thomsonderwent.com/coverage/latestupdates/ <<<

>>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER GUIDES, PLEASE VISIT:
http://thomsonderwent.com/support/userguides/ <<<

>>> NEW! FAST-ALERTING ACCESS TO NEWLY-PUBLISHED PATENT DOCUMENTATION NOW AVAILABLE IN DERWENT WORLD PATENTS INDEX FIRST VIEW - FILE WPIFV.
FOR FURTHER DETAILS: http://www.thomsonderwent.com/dwpifv <<<

>>> THE CPI AND EPI MANUAL CODES HAVE BEEN REVISED FROM UPDATE 200501.
PLEASE CHECK:
http://thomsonderwent.com/support/dwpiref/reftools/classification/code-rev
FOR DETAILS. <<<

FILE REGISTRY
Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 31 OCT 2005 HIGHEST RN 866452-21-3
DICTIONARY FILE UPDATES: 31 OCT 2005 HIGHEST RN 866452-21-3

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

```
**************************************************************
*                                                            *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005.  A new display format, IDERL, is now    *
* available and contains the CA role and document type information. *
*                                                            *
**************************************************************

Structure search iteration limits have been increased.  See HELP SLIMITS
for details.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

FILE LREGISTRY
LREGISTRY IS A STATIC LEARNING FILE

NEW CAS INFORMATION USE POLICIES, ENTER HELP USAGETERMS FOR DETAILS.

FILE CASREACT
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26, 1996), unless otherwise indicated in the original publications.

FILE CONTENT:1840 - 30 Oct 2005 VOL 143 ISS 18

New CAS Information Use Policies, enter HELP USAGETERMS for details.

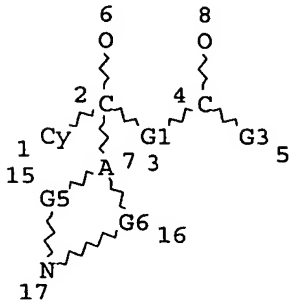
**********************************************************
*                                                        *
*     CASREACT now has more than 9.2 million reactions   *
*                                                        *
**********************************************************

Some CASREACT records are derived from the ZIC/VINITI database (1974-1991)
provided by InfoChem, INPI data prior to 1986, and Biotransformations
database compiled under the direction of Professor Dr. Klaus Kieslich.

This file contains CAS Registry Numbers for easy and accurate substance
identification.

=> d que stat l13
L12             STR
```

CH~G2 C @11 O @12 O~G4
@9 10 @13 14



VAR G1=CH2/9/11
VAR G2=AK/CY
VAR G3=12/13
VAR G4=AK/CY
REP G5=(0-4) A
REP G6=(0-4) A
NODE ATTRIBUTES:
NSPEC IS R AT 11
CONNECT IS E1 RC AT 6
CONNECT IS E1 RC AT 8
CONNECT IS E1 RC AT 12
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 1
DEFAULT ECLEVEL IS LIMITED

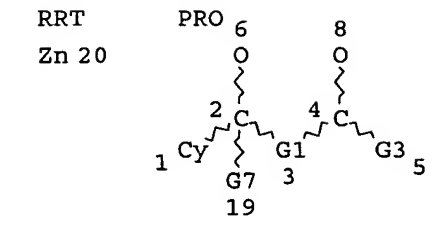
GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 17

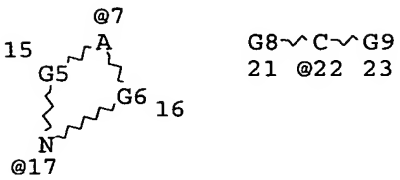
STEREO ATTRIBUTES: NONE
L13 1 SEA FILE=REGISTRY SSS SAM L12

4.4% PROCESSED 2000 ITERATIONS 1 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 897609 TO 923071
PROJECTED ANSWERS: 169 TO 741

=> => d que stat l14
L12 STR





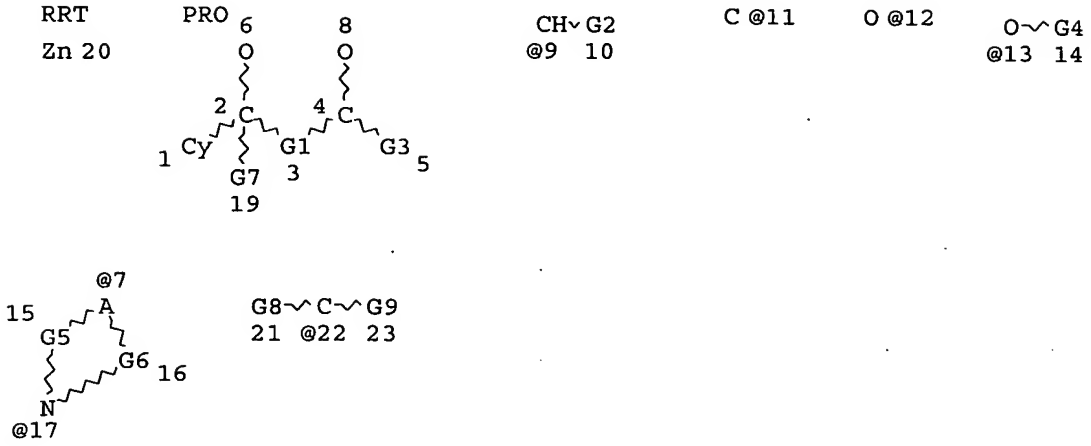
VAR G1=CH2/9/22/11
VAR G2=AK/CY
VAR G3=12/13
VAR G4=AK/CY
REP G5=(0-4) A
REP G6=(0-4) A
VAR G7=7/17
VAR G8=AK/CY
VAR G9=AK/CY
NODE ATTRIBUTES:
NSPEC IS R AT 11
NSPEC IS RC AT 20
CONNECT IS E1 RC AT 6
CONNECT IS E1 RC AT 8
CONNECT IS E1 RC AT 12
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 1
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 22

STEREO ATTRIBUTES: NONE
L14 3 SEA FILE=CASREACT SSS FUL L12 (17 REACTIONS)

100.0% DONE 12507 VERIFIED 17 HIT RXNS 3 DOCS
SEARCH TIME: 00.00.02

=> d que stat l15
L12 STR



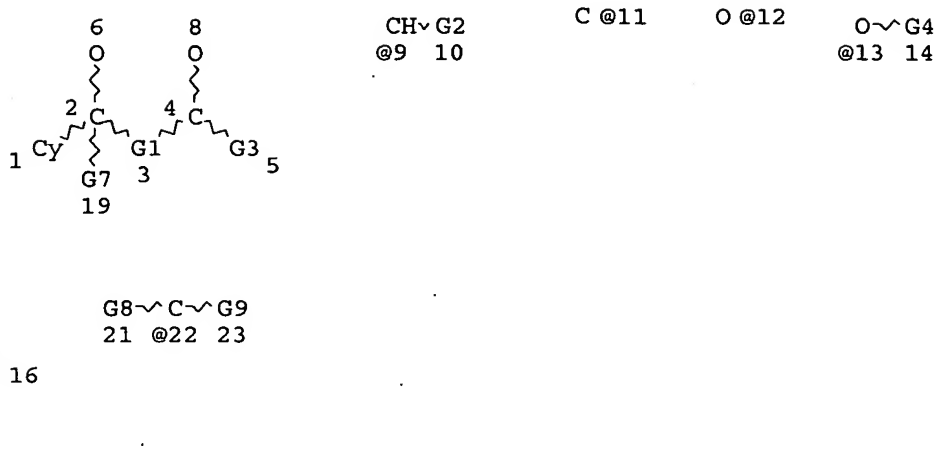
VAR G1=CH2/9/22/11
VAR G2=AK/CY
VAR G3=12/13
VAR G4=AK/CY
REP G5=(0-4) A
REP G6=(0-4) A
VAR G7=7/17
VAR G8=AK/CY
VAR G9=AK/CY
NODE ATTRIBUTES:
NSPEC IS R AT 11
NSPEC IS RC AT 20
CONNECT IS E1 RC AT 6
CONNECT IS E1 RC AT 8
CONNECT IS E1 RC AT 12
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 1
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 22

STEREO ATTRIBUTES: NONE
L15 3 SEA FILE=CHEMINFORMRX SSS FUL L12 (10 REACTIONS)

100.0% DONE 541 VERIFIED 10 HIT RXNS 3 DOCS
SEARCH TIME: 00.00.13

=> d que stat l17
L16 STR




```
VAR G1=CH2/9/22/11
VAR G2=AK/CY
VAR G3=12/13
VAR G4=AK/CY
REP G5=(0-4) A
REP G6=(0-4) A
VAR G7=7/17
VAR G8=AK/CY
VAR G9=AK/CY
NODE ATTRIBUTES:
NSPEC   IS R      AT  11
CONNECT IS E1  RC AT   6
CONNECT IS E1  RC AT   8
CONNECT IS E1  RC AT  12
DEFAULT MLEVEL IS ATOM
GGCAT   IS UNS  AT   1
DEFAULT ECLEVEL IS LIMITED

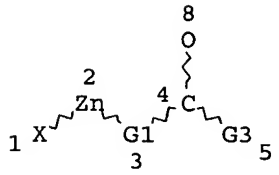
GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  21

STEREO ATTRIBUTES: NONE
L17         107 SEA FILE=BEILSTEIN SSS FUL L16

100.0% PROCESSED   168333 ITERATIONS   (     12 INCOMPLETE)      107 ANSWERS
SEARCH TIME: 00.02.10


=> d que stat l22
L20             STR
```

CH~G2 C @11 O @12 O~G4 G8~C~G9
@9 10 @13 14 21 @22 23



VAR G1=CH2/9/22/11
VAR G2=AK/CY
VAR G3=12/13
VAR G4=AK/CY
VAR G8=AK/CY
VAR G9=AK/CY
NODE ATTRIBUTES:
NSPEC IS R AT 11
CONNECT IS E1 RC AT 8
CONNECT IS E1 RC AT 12
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE
L22 29 SEA FILE=BEILSTEIN SSS FUL L20

100.0% PROCESSED 308 ITERATIONS 29 ANSWERS
SEARCH TIME: 00.00.03

=> d que stat l25
L23 103 SEA FILE=BEILSTEIN ABB=ON PLU=ON (1000498/RX.PBRN OR
1029091/RX.PBRN OR 227218/RX.PBRN OR 228022/RX.PBRN OR
256437/RX.PBRN OR 256517/RX.PBRN OR 280315/RX.PBRN OR 280375/RX
.PBRN OR 2944799/RX.PBRN OR 2944800/RX.PBRN OR 2945594/RX.PBRN
OR 2945595/RX.PBRN OR 2946140/RX.PBRN OR 2946141/RX.PBRN OR
302971/RX.PBRN OR 303014/RX.PBRN OR 3509316/RX.PBRN OR
4004404/RX.PBRN OR 4008110/RX.PBRN OR 4009312/RX.PBRN OR
4013992/RX.PBRN OR 4014062/RX.PBRN OR 4014085/RX.PBRN OR
4018446/RX.PBRN OR 402369/RX.PBRN OR 402371/RX.PBRN OR
4030949/RX.PBRN OR 403535/RX.PBRN OR 4060876/RX.PBRN OR
4060897/RX.PBRN OR 4068653/RX.PBRN OR 4076524/RX.PBRN OR
411907/RX.PBRN OR 412001/RX.PBRN OR 412130/RX.PBRN OR 412307/RX
.PBRN OR 415011/RX.PBRN OR 4196151/RX.PBRN OR 4197922/RX.PBRN
OR 4198709/RX.PBRN OR 4199425/RX.PBRN OR 4200433/RX.PBRN OR
4200739/RX.PBRN OR 4201346/RX.PBRN OR 4202427/RX.PBRN OR
4202615/RX.PBRN OR 4202749/RX.PBRN OR 4203423/RX.PBRN OR
4203842/RX.PBRN OR 4204078/RX.PBRN OR 4204417/RX.PBRN OR
4205443/RX.PBRN OR 4206160/RX.PBRN OR 4206744/RX.PBRN OR

4207231/RX.PBRN OR 4207532/RX.PBRN OR 4207737/RX.PBRN OR
4207964/RX.PBRN OR 4209827/RX.PBRN OR 4211439/RX.PBRN OR
4211896/RX.PBRN OR 4212207/RX.PBRN OR 423298/RX.PBRN OR
4236568/RX.PBRN OR 4236569/RX.PBRN OR 423670/RX.PBRN OR
4237513/RX.PBRN OR 4237514/RX.PBRN OR 4237677/RX.PBRN OR
4237678/RX.PBRN OR 4271435/RX.PBRN OR 4541467/RX.PBRN OR
4554375/RX.PBRN OR 4560363/RX.PBRN OR 4579761/RX.PBRN OR
479569/RX.PBRN OR 483055/RX.PBRN OR 5616843/RX.PBRN OR
5621768/RX.PBRN OR 5701651/RX.PBRN OR 5701869/RX.PBRN OR
6456290/RX.PBRN OR 6484924/RX.PBRN OR 6665902/RX.PBRN OR
6670373/RX.PBRN OR 7347326/RX.PBRN OR 7347386/RX.PBRN OR
7347522/RX.PBRN OR 7350206/RX.PBRN OR 7350207/RX.PBRN OR
7350208/RX.PBRN OR 7775119/RX.PBRN OR 8293161/RX.PBRN OR
831769/RX.PBRN OR 867903/RX.PBRN OR 92

L24 364 SEA FILE=BEILSTEIN ABB=ON PLU=ON (3935224/RX.RBRN OR
3937957/RX.RBRN OR 3939779/RX.RBRN OR 3939846/RX.RBRN OR
3940561/RX.RBRN OR 3940563/RX.RBRN OR 3944532/RX.RBRN OR
4126535/RX.RBRN OR 4128087/RX.RBRN OR 4128089/RX.RBRN OR
4129730/RX.RBRN OR 4370797/RX.RBRN OR 4440098/RX.RBRN OR
4955879/RX.RBRN OR 5535799/RX.RBRN OR 5923159/RX.RBRN OR
5929986/RX.RBRN OR 6054715/RX.RBRN OR 6694836/RX.RBRN OR
6695090/RX.RBRN OR 6695492/RX.RBRN OR 6776280/RX.RBRN OR
6967375/RX.RBRN OR 6967709/RX.RBRN OR 7012013/RX.RBRN OR
7700987/RX.RBRN OR 8870278/RX.RBRN OR 9255691/RX.RBRN OR
9757456/RX.RBRN)

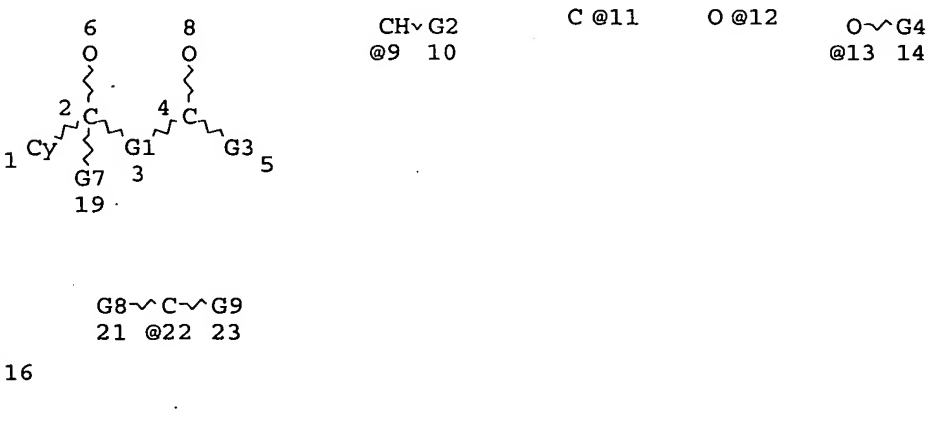
L25 7 SEA FILE=BEILSTEIN ABB=ON PLU=ON L23 AND L24

=> d que stat l26

L26 2 SEA FILE=BABS ABB=ON PLU=ON (6360103/AN OR 5850619/AN)

=> d que stat l31

L16 STR

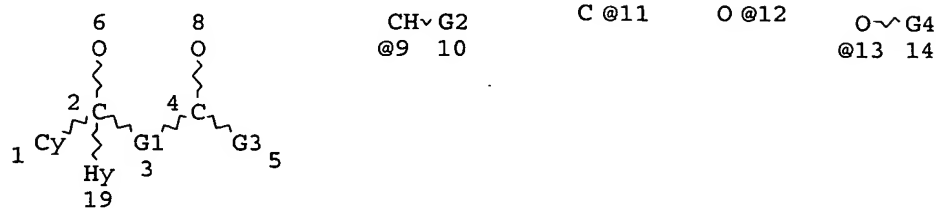


VAR G1=CH2/9/22/11
VAR G2=AK/CY
VAR G3=12/13
VAR G4=AK/CY
REP G5=(0-4) A
REP G6=(0-4) A
VAR G7=7/17
VAR G8=AK/CY

```
VAR G9=AK/CY
NODE ATTRIBUTES:
NSPEC   IS R      AT  11
CONNECT IS E1  RC AT   6
CONNECT IS E1  RC AT   8
CONNECT IS E1  RC AT  12
DEFAULT MLEVEL IS ATOM
GGCAT   IS UNS  AT   1
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  21

STEREO ATTRIBUTES: NONE
L28          119 SEA FILE=REGISTRY SSS FUL L16
L29              STR
```




```
VAR G1=CH2/9/22/11
VAR G2=AK/CY
VAR G3=12/13
VAR G4=AK/CY
VAR G8=AK/CY
VAR G9=AK/CY
NODE ATTRIBUTES:
NSPEC   IS R      AT  11
CONNECT IS E1  RC AT   6
CONNECT IS E1  RC AT   8
CONNECT IS E1  RC AT  12
DEFAULT MLEVEL IS ATOM
GGCAT   IS UNS  AT   1
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  17

STEREO ATTRIBUTES: NONE
L31           72 SEA FILE=REGISTRY SUB=L28 SSS FUL L29

100.0% PROCESSED     119 ITERATIONS                    72 ANSWERS
SEARCH TIME: 00.00.01


=> d l39
L39          ANALYZE L31 1- LC :      10 TERMS
```

TERM #	# OCC	# DOC	% DOC	LC
1	68	68	94.44	CA
2	68	68	94.44	CAPLUS
3	26	26	36.11	BEILSTEIN
4	25	25	34.72	USPATFULL
5	20	20	27.78	CAOLD
6	19	19	26.39	CASREACT
7	8	8	11.11	TOXCENTER
8	1	1	1.39	IFICDB
9	1	1	1.39	IFIPAT
10	1	1	1.39	IFIUDB

```
=> d que nos l37
L16             STR
L28         119 SEA FILE=REGISTRY SSS FUL L16
L29             STR
L31          72 SEA FILE=REGISTRY SUB=L28 SSS FUL L29
L32          39 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L31
L33          25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L31 (L) PREP+NT/RL
L34           6 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L33 AND (?ZINC? OR ZN?)
L35           9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L32 AND ?REFORMATSK?
L36           6 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L33 AND L35
L37          13 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L34 OR L35 OR L36)


=> d his l44

     (FILE 'CAOLD, CASREACT, TOXCENTER, USPATFULL, USPAT2, IFICDB' ENTERED AT
     09:31:27 ON 03 NOV 2005)
L44          13 S L42-L43

=> d que nos l44
L16             STR
L28         119 SEA FILE=REGISTRY SSS FUL L16
L29             STR
L31          72 SEA FILE=REGISTRY SUB=L28 SSS FUL L29
L40          36 SEA L31
L41          35 DUP REM L40 (1 DUPLICATE REMOVED)
L42          10 SEA L41 AND (ZN? OR ?ZINC?)
L43           7 SEA L41 AND ?REFORMATSK?
L44          13 SEA (L42 OR L43)


=> d que l53
L45       91627 SEA FILE=WPIX ABB=ON  PLU=ON  ((F50? OR F51? OR F52? OR F53?
                OR F54? OR F55? OR F57? OR F58? OR F590)(P) M53? (P) (M710 OR
                M720))/M0,M1,M2,M3,M4,M5,M6
L48          54 SEA FILE=WPIX ABB=ON  PLU=ON  ?REFORMATSK?/BIX
L52          25 SEA FILE=WPIX ABB=ON  PLU=ON  L48 (L) (ZN? OR ?ZINC?)/BIX
L53           3 SEA FILE=WPIX ABB=ON  PLU=ON  L45 AND L52


=> d his l65

     (FILE 'HCAPLUS, BIOSIS, MEDLINE, EMBASE, CANCERLIT, PASCAL, JICST-EPLUS,
     SCISEARCH, WPIX, CONF, CONFSCI, DISSABS' ENTERED AT 09:59:38 ON 03 NOV
     2005)
```

```
L65           5 S L63 OR L64

=> d que l65
L54        3379 SEA YAMANO, T?/AU
L55         261 SEA TAYA, N?/AU
L56         116 SEA OJIDA, A?/AU
L57          64 SEA (L54 OR L55 OR L56) AND (ZN? OR ?ZINC? OR ?ORGANOZINC? OR
                  ?HALOZINC? OR ?BROMOZINC? OR ?FLUOROZINC? OR ?CHLOROZINC? OR
                  ?IODOZINC?)
L58           6 SEA (L54 OR L55 OR L56) AND ?REFORMATSK?
L59          68 SEA (L57 OR L58)
L60          43 DUP REM L59 (25 DUPLICATES REMOVED)
L61           2 SEA L60 AND (?STEREO? OR ?ENANTIO?)
L62           6 SEA L58 OR L61
L63           4 DUP REM L62 (2 DUPLICATES REMOVED)
L64           5 SEA L60 AND ?TAKED?/PA,CS,SO
L65           5 SEA L63 OR L64

=> [redacted]

     (FILE 'HOME' ENTERED AT 07:56:43 ON 03 NOV 2005)

     FILE 'HCAPLUS' ENTERED AT 07:56:56 ON 03 NOV 2005
               ACT FRE309HCAAPP/A
               ---------
L1             1 SEA ABB=ON  PLU=ON  WO2003-JP2563/APPS
               ---------

     FILE 'WPIX' ENTERED AT 07:57:10 ON 03 NOV 2005
               ACT FRE309WPIAPP/A
               ---------
L2             1 SEA ABB=ON  PLU=ON  WO2003-JP2563/APPS
               ---------

     FILE 'REGISTRY' ENTERED AT 07:57:30 ON 03 NOV 2005
               ACT FRE309REGAPP/A
               ---------
L3   (         1)SEA ABB=ON  PLU=ON  WO2003-JP2563/APPS
L4               SEL PLU=ON  L3 1- RN :       18 TERMS
L5            18 SEA ABB=ON  PLU=ON  L4
               ---------

     FILE 'STNGUIDE' ENTERED AT 07:58:13 ON 03 NOV 2005

     FILE 'LREGISTRY' ENTERED AT 07:59:22 ON 03 NOV 2005
               ACT FRE309P3/Q
               ---------
L6             STR
               ---------
L7             STR L6

     FILE 'REGISTRY' ENTERED AT 08:04:00 ON 03 NOV 2005
L8             1 SEA SSS SAM L7
               D SCAN

     FILE 'STNGUIDE' ENTERED AT 08:04:17 ON 03 NOV 2005

     FILE 'LREGISTRY' ENTERED AT 08:05:31 ON 03 NOV 2005
L9             STR L7
```

```
     FILE 'CASREACT' ENTERED AT 08:13:47 ON 03 NOV 2005

     FILE 'LREGISTRY' ENTERED AT 08:14:01 ON 03 NOV 2005
L10             STR L7

     FILE 'CASREACT' ENTERED AT 08:15:06 ON 03 NOV 2005
L11           0 SEA SSS SAM L10 (     0 REACTIONS)

     FILE 'STNGUIDE' ENTERED AT 08:15:25 ON 03 NOV 2005
               D QUE STAT

     FILE 'LREGISTRY' ENTERED AT 08:18:38 ON 03 NOV 2005
L12             STR L10

     FILE 'CASREACT' ENTERED AT 08:22:21 ON 03 NOV 2005
L13           0 SEA SSS SAM L12 (     0 REACTIONS)
                D QUE STAT
L14           3 SEA SSS FUL L12 (    17 REACTIONS)
                SAVE TEMP L14 FRE309CRX1/A
                D SCAN

     FILE 'STNGUIDE' ENTERED AT 08:24:32 ON 03 NOV 2005

     FILE 'CHEMINFORMRX' ENTERED AT 08:24:47 ON 03 NOV 2005
L15           3 SEA SSS FUL L12 (    10 REACTIONS)
                SAVE TEMP L15 FRE309CHM1//A FRE309CHM1/A
                D SCAN

     FILE 'STNGUIDE' ENTERED AT 08:26:48 ON 03 NOV 2005

     FILE 'LREGISTRY' ENTERED AT 08:26:53 ON 03 NOV 2005
L16             STR L12

     FILE 'BEILSTEIN' ENTERED AT 08:29:23 ON 03 NOV 2005
L17         107 SEA SSS FUL L16
                SAVE TEMP L17 FRE309BEIP1/A

     FILE 'LREGISTRY' ENTERED AT 08:32:29 ON 03 NOV 2005
L18             STR

     FILE 'BEILSTEIN' ENTERED AT 08:35:41 ON 03 NOV 2005
L19       18338 SEA SSS FUL L18

     FILE 'LREGISTRY' ENTERED AT 08:39:10 ON 03 NOV 2005
L20             STR L16

     FILE 'REGISTRY' ENTERED AT 08:42:38 ON 03 NOV 2005
L21           2 SEA SSS SAM L20
                D SCAN

     FILE 'BEILSTEIN' ENTERED AT 08:43:10 ON 03 NOV 2005
L22          29 SEA SSS FUL L20
                SAVE TEMP L22 FRE309BEIR1 FRE309BEIR1/A
                SELECT L17 1- BRN
                SELECT L22 1- BRN
L23         103 SEA ABB=ON  PLU=ON  (1000498/RX.PBRN OR 1029091/RX.PBRN OR
                227218/RX.PBRN OR 228022/RX.PBRN OR 256437/RX.PBRN OR 256517/RX
                .PBRN OR 280315/RX.PBRN OR 280375/RX.PBRN OR 2944799/RX.PBRN
                OR 2944800/RX.PBRN OR 2945594/RX.PBRN OR 2945595/RX.PBRN OR
```

```
                2946140/RX.PBRN OR 2946141/RX.PBRN OR 302971/RX.PBRN OR
                303014/RX.PBRN OR 3509316/RX.PBRN OR 4004404/RX.PBRN OR
                4008110/RX.PBRN OR 4009312/RX.PBRN OR 4013992/RX.PBRN OR
                4014062/RX.PBRN OR 4014085/RX.PBRN OR 4018446/RX.PBRN OR
                402369/RX.PBRN OR 402371/RX.PBRN OR 4030949/RX.PBRN OR
                403535/RX.PBRN OR 4060876/RX.PBRN OR 4060897/RX.PBRN OR
                4068653/RX.PBRN OR 4076524/RX.PBRN OR 411907/RX.PBRN OR
                412001/RX.PBRN OR 412130/RX.PBRN OR 412307/RX.PBRN OR 415011/RX
                .PBRN OR 4196151/RX.PBRN OR 4197922/RX.PBRN OR 4198709/RX.PBRN
                OR 4199425/RX.PBRN OR 4200433/RX.PBRN OR 4200739/RX.PBRN OR
                4201346/RX.PBRN OR 4202427/RX.PBRN OR 4202615/RX.PBRN OR
                4202749/RX.PBRN OR 4203423/RX.PBRN OR 4203842/RX.PBRN OR
                4204078/RX.PBRN OR 4204417/RX.PBRN OR 4205443/RX.PBRN OR
                4206160/RX.PBRN OR 4206744/RX.PBRN OR 4207231/RX.PBRN OR
                4207532/RX.PBRN OR 4207737/RX.PBRN OR 4207964/RX.PBRN OR
                4209827/RX.PBRN OR 4211439/RX.PBRN OR 4211896/RX.PBRN OR
                4212207/RX.PBRN OR 423298/RX.PBRN OR 4236568/RX.PBRN OR
                4236569/RX.PBRN OR 423670/RX.PBRN OR 4237513/RX.PBRN OR
                4237514/RX.PBRN OR 4237677/RX.PBRN OR 4237678/RX.PBRN OR
                4271435/RX.PBRN OR 4541467/RX.PBRN OR 4554375/RX.PBRN OR
                4560363/RX.PBRN OR 4579761/RX.PBRN OR 479569/RX.PBRN OR
                483055/RX.PBRN OR 5616843/RX.PBRN OR 5621768/RX.PBRN OR
                5701651/RX.PBRN OR 5701869/RX.PBRN OR 6456290/RX.PBRN OR
                6484924/RX.PBRN OR 6665902/RX.PBRN OR 6670373/RX.PBRN OR
                7347326/RX.PBRN OR 7347386/RX.PBRN OR 7347522/RX.PBRN OR
                7350206/RX.PBRN OR 7350207/RX.PBRN OR 7350208/RX.PBRN OR
                7775119/RX.PBRN OR 8293161/RX.PBRN OR 831769/RX.PBRN OR
                867903/RX.PBRN OR 9204209/RX.PBRN OR 9204210/RX.PBRN OR
                9228872/RX.PBRN OR 9229074/RX.PBRN OR 9233929/RX.PBRN OR
                9234965/RX.PBRN OR 9234966/RX.PBRN OR 9261109/RX.PBRN OR
                9285141/RX.PBRN OR 9855708/RX.PBRN OR 9861610/RX.PBRN OR
                991523/RX.PBRN)
L24          364 SEA ABB=ON  PLU=ON  (3935224/RX.RBRN OR 3937957/RX.RBRN OR
                3939779/RX.RBRN OR 3939846/RX.RBRN OR 3940561/RX.RBRN OR
                3940563/RX.RBRN OR 3944532/RX.RBRN OR 4126535/RX.RBRN OR
                4128087/RX.RBRN OR 4128089/RX.RBRN OR 4129730/RX.RBRN OR
                4370797/RX.RBRN OR 4440098/RX.RBRN OR 4955879/RX.RBRN OR
                5535799/RX.RBRN OR 5923159/RX.RBRN OR 5929986/RX.RBRN OR
                6054715/RX.RBRN OR 6694836/RX.RBRN OR 6695090/RX.RBRN OR
                6695492/RX.RBRN OR 6776280/RX.RBRN OR 6967375/RX.RBRN OR
                6967709/RX.RBRN OR 7012013/RX.RBRN OR 7700987/RX.RBRN OR
                8870278/RX.RBRN OR 9255691/RX.RBRN OR 9757456/RX.RBRN)
L25            7 SEA ABB=ON  PLU=ON  L23 AND L24
                SAVE TEMP L25 FRE309BEIRX1/A
                SELECT L25 1- BABSAN

     FILE 'BABS' ENTERED AT 08:50:48 ON 03 NOV 2005
L26            2 SEA ABB=ON  PLU=ON  (6360103/AN OR 5850619/AN)
                SAVE TEMP L26 FRE309BAB1/A
                D SCAN

     FILE 'STNGUIDE' ENTERED AT 08:51:58 ON 03 NOV 2005
                D SAVED

     FILE 'REGISTRY' ENTERED AT 08:57:21 ON 03 NOV 2005
L27            2 SEA SSS SAM L16
                D SCAN
                D QUE STAT

     FILE 'STNGUIDE' ENTERED AT 08:57:41 ON 03 NOV 2005
```

```
     FILE 'REGISTRY' ENTERED AT 09:14:54 ON 03 NOV 2005
L28          119 SEA SSS FUL L16
                 SAVE TEMP L28 FRE309PSET1/A
                 D QUE STAT

     FILE 'LREGISTRY' ENTERED AT 09:19:16 ON 03 NOV 2005
L29              STR L16

     FILE 'REGISTRY' ENTERED AT 09:21:12 ON 03 NOV 2005
L30            3 SEA SUB=L28 SSS SAM L29
                 D SCAN
L31           72 SEA SUB=L28 SSS FUL L29
                 SAVE TEMP L31 FRE309RSET1/A
                 D SAVED

     FILE 'STNGUIDE' ENTERED AT 09:23:06 ON 03 NOV 2005

     FILE 'HCAPLUS' ENTERED AT 09:23:32 ON 03 NOV 2005
L32           39 SEA ABB=ON  PLU=ON  L31
L33           25 SEA ABB=ON  PLU=ON  L31 (L) PREP+NT/RL
L34            6 SEA ABB=ON  PLU=ON  L33 AND (?ZINC? OR ZN?)
                 D SCAN
L35            9 SEA ABB=ON  PLU=ON  L32 AND ?REFORMATSK?
                 D SCAN TI HIT

     FILE 'STNGUIDE' ENTERED AT 09:25:57 ON 03 NOV 2005

     FILE 'HCAPLUS' ENTERED AT 09:27:58 ON 03 NOV 2005
L36            6 SEA ABB=ON  PLU=ON  L33 AND L35
L37           13 SEA ABB=ON  PLU=ON  (L34 OR L35 OR L36)
L38           13 SEA ABB=ON  PLU=ON  L37 AND (AY<2003 OR PY<2003 OR PRY<2003)
                 SAVE TEMP L37 FRE309HCA1/A

     FILE 'STNGUIDE' ENTERED AT 09:29:27 ON 03 NOV 2005

     FILE 'REGISTRY' ENTERED AT 09:29:34 ON 03 NOV 2005
L39              ANALYZE PLU=ON  L31 1- LC :       10 TERMS
                 D 1-10

     FILE 'CAOLD, CASREACT, TOXCENTER, USPATFULL, USPAT2, IFICDB' ENTERED AT
     09:31:27 ON 03 NOV 2005
L40           36 SEA ABB=ON  PLU=ON  L31
L41           35 DUP REM L40 (1 DUPLICATE REMOVED)
                      ANSWERS '1-8' FROM FILE CAOLD
                      ANSWERS '9-19' FROM FILE CASREACT
                      ANSWERS '20-25' FROM FILE TOXCENTER
                      ANSWERS '26-34' FROM FILE USPATFULL
                      ANSWER '35' FROM FILE IFICDB
L42           10 SEA ABB=ON  PLU=ON  L41 AND (ZN? OR ?ZINC?)
L43            7 SEA ABB=ON  PLU=ON  L41 AND ?REFORMATSK?
L44           13 SEA ABB=ON  PLU=ON  (L42 OR L43)
                 SAVE TEMP L44 FRE309MUL1/A
                 D SAVED

     FILE 'STNGUIDE' ENTERED AT 09:33:36 ON 03 NOV 2005

     FILE 'WPIX' ENTERED AT 09:33:40 ON 03 NOV 2005
                 D CMC L2
```

```
     FILE 'STNGUIDE' ENTERED AT 09:33:51 ON 03 NOV 2005

     FILE 'WPIX' ENTERED AT 09:50:32 ON 03 NOV 2005
L45       91627 SEA ABB=ON  PLU=ON  ((F50? OR F51? OR F52? OR F53? OR F54? OR
                F55? OR F57? OR F58? OR F590)(P) M53? (P) (M710 OR M720))/M0,M1
                ,M2,M3,M4,M5,M6
L46       49667 SEA ABB=ON  PLU=ON  A430/M0,M1,M2,M3,M4,M5,M6
L47        1048 SEA ABB=ON  PLU=ON  L45 AND L46
                D TRI
L48          54 SEA ABB=ON  PLU=ON  ?REFORMATSK?/BIX
L49           1 SEA ABB=ON  PLU=ON  L47 AND L48
                D TRI
                D KWIC
                D IALL L2

     FILE 'STNGUIDE' ENTERED AT 09:53:56 ON 03 NOV 2005

     FILE 'WPIX' ENTERED AT 09:54:41 ON 03 NOV 2005
L50          25 SEA ABB=ON  PLU=ON  L48 (L) (ZN? OR ?ZINC?)
                D TRI 1-3
L51           3 SEA ABB=ON  PLU=ON  L50 AND L45
                D TRI 1-3
L52          25 SEA ABB=ON  PLU=ON  L48 (L) (ZN? OR ?ZINC?)/BIX
L53           3 SEA ABB=ON  PLU=ON  L45 AND L52
                SAVE TEMP L53 FRE309WPI1/A

     FILE 'STNGUIDE' ENTERED AT 09:57:26 ON 03 NOV 2005
                D SAVED

     FILE 'HCAPLUS, BIOSIS, MEDLINE, EMBASE, CANCERLIT, PASCAL, JICST-EPLUS,
     SCISEARCH, WPIX, CONF, CONFSCI, DISSABS' ENTERED AT 09:59:38 ON 03 NOV
     2005
L54        3379 SEA ABB=ON  PLU=ON  YAMANO, T?/AU
L55         261 SEA ABB=ON  PLU=ON  TAYA, N?/AU
L56         116 SEA ABB=ON  PLU=ON  OJIDA, A?/AU
L57          64 SEA ABB=ON  PLU=ON  (L54 OR L55 OR L56) AND (ZN? OR ?ZINC? OR
                ?ORGANOZINC? OR ?HALOZINC? OR ?BROMOZINC? OR ?FLUOROZINC? OR
                ?CHLOROZINC? OR ?IODOZINC?)
L58           6 SEA ABB=ON  PLU=ON  (L54 OR L55 OR L56) AND ?REFORMATSK?
L59          68 SEA ABB=ON  PLU=ON  (L57 OR L58)
L60          43 DUP REM L59 (25 DUPLICATES REMOVED)
                     ANSWERS '1-16' FROM FILE HCAPLUS
                     ANSWER '17' FROM FILE MEDLINE
                     ANSWERS '18-42' FROM FILE JICST-EPLUS
                     ANSWER '43' FROM FILE SCISEARCH
L61           2 SEA ABB=ON  PLU=ON  L60 AND (?STEREO? OR ?ENANTIO?)
L62           6 SEA ABB=ON  PLU=ON  L58 OR L61
L63           4 DUP REM L62 (2 DUPLICATES REMOVED)
                     ANSWERS '1-3' FROM FILE HCAPLUS
                     ANSWER '4' FROM FILE SCISEARCH
L64           5 SEA ABB=ON  PLU=ON  L60 AND ?TAKED?/PA,CS,SO
L65           5 SEA ABB=ON  PLU=ON  L63 OR L64
                D SCAN
                SAVE TEMP L65 FRE309MULINV/A

     FILE 'STNGUIDE' ENTERED AT 10:05:54 ON 03 NOV 2005
                D SAVED

     FILE 'HCAPLUS' ENTERED AT 10:06:23 ON 03 NOV 2005
L66           1 SEA ABB=ON  PLU=ON  L37 AND L1
```

FILE 'STNGUIDE' ENTERED AT 10:06:31 ON 03 NOV 2005

FILE 'LREGISTRY' ENTERED AT 10:06:49 ON 03 NOV 2005

FILE 'REGISTRY' ENTERED AT 10:06:52 ON 03 NOV 2005

FILE 'CASREACT' ENTERED AT 10:06:58 ON 03 NOV 2005

FILE 'CHEMINFORMRX' ENTERED AT 10:07:05 ON 03 NOV 2005

FILE 'BEILSTEIN' ENTERED AT 10:07:14 ON 03 NOV 2005

FILE 'BABS' ENTERED AT 10:07:19 ON 03 NOV 2005

FILE 'HCAPLUS' ENTERED AT 10:07:27 ON 03 NOV 2005

FILE 'USPATFULL' ENTERED AT 10:07:31 ON 03 NOV 2005

FILE 'USPAT2' ENTERED AT 10:07:35 ON 03 NOV 2005

FILE 'CAOLD' ENTERED AT 10:07:39 ON 03 NOV 2005

FILE 'TOXCENTER' ENTERED AT 10:07:45 ON 03 NOV 2005

FILE 'IFICDB' ENTERED AT 10:07:49 ON 03 NOV 2005

FILE 'WPIX' ENTERED AT 10:07:54 ON 03 NOV 2005

FILE 'BIOSIS' ENTERED AT 10:08:02 ON 03 NOV 2005

FILE 'MEDLINE' ENTERED AT 10:08:05 ON 03 NOV 2005

FILE 'EMBASE' ENTERED AT 10:08:08 ON 03 NOV 2005

FILE 'CANCERLIT' ENTERED AT 10:08:11 ON 03 NOV 2005

FILE 'PASCAL' ENTERED AT 10:08:15 ON 03 NOV 2005

FILE 'JICST-EPLUS' ENTERED AT 10:08:18 ON 03 NOV 2005

FILE 'SCISEARCH' ENTERED AT 10:08:25 ON 03 NOV 2005

FILE 'WPIX' ENTERED AT 10:08:29 ON 03 NOV 2005

FILE 'CONF' ENTERED AT 10:08:32 ON 03 NOV 2005

FILE 'CONFSCI' ENTERED AT 10:08:38 ON 03 NOV 2005

FILE 'DISSABS' ENTERED AT 10:08:41 ON 03 NOV 2005

FILE 'STNGUIDE' ENTERED AT 10:08:44 ON 03 NOV 2005

```
D QUE STAT L14
D QUE NOS L15
D QUE STAT L17
D QUE STAT L22
D QUE STAT L25
D QUE STAT L26
D QUE STAT L31
D QUE L39
```

```
             D L39 1-10
             D QUE NOS L37
             D QUE NOS L44
             D QUE L53

     FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, TOXCENTER, USPATFULL,
     WPIX' ENTERED AT 10:12:56 ON 03 NOV 2005
L67          27 DUP REM L14 L15 L26 L37 L44 L53 (10 DUPLICATES REMOVED)
                    ANSWERS '1-4' FROM FILE CASREACT
                    ANSWERS '5-7' FROM FILE CHEMINFORMRX
                    ANSWER '8' FROM FILE BABS
                    ANSWERS '9-17' FROM FILE HCAPLUS
                    ANSWER '18' FROM FILE CAOLD
                    ANSWERS '19-25' FROM FILE USPATFULL
                    ANSWERS '26-27' FROM FILE WPIX

     FILE 'STNGUIDE' ENTERED AT 10:13:30 ON 03 NOV 2005

     FILE 'BEILSTEIN' ENTERED AT 10:14:03 ON 03 NOV 2005
           D RX L25 1

     FILE 'STNGUIDE' ENTERED AT 10:14:04 ON 03 NOV 2005

     FILE 'BEILSTEIN' ENTERED AT 10:14:36 ON 03 NOV 2005
           D RX L25 2-7

     FILE 'STNGUIDE' ENTERED AT 10:14:39 ON 03 NOV 2005

     FILE 'CASREACT' ENTERED AT 10:15:35 ON 03 NOV 2005

     FILE 'STNGUIDE' ENTERED AT 10:15:55 ON 03 NOV 2005

     FILE 'CHEMINFORMRX' ENTERED AT 10:16:36 ON 03 NOV 2005

     FILE 'STNGUIDE' ENTERED AT 10:17:23 ON 03 NOV 2005

     FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX'
     ENTERED AT 10:17:45 ON 03 NOV 2005
           D IBIB ED ABS HIT

     FILE 'STNGUIDE' ENTERED AT 10:17:59 ON 03 NOV 2005

     FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX'
     ENTERED AT 10:18:35 ON 03 NOV 2005
           D IBIB ABS HIT 2-4

     FILE 'STNGUIDE' ENTERED AT 10:18:48 ON 03 NOV 2005

     FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX'
     ENTERED AT 10:19:17 ON 03 NOV 2005
           D BIB RX 5

     FILE 'STNGUIDE' ENTERED AT 10:19:21 ON 03 NOV 2005

     FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX'
     ENTERED AT 10:19:32 ON 03 NOV 2005
           D BIB RX 6-7

     FILE 'STNGUIDE' ENTERED AT 10:19:39 ON 03 NOV 2005
```

```
FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX'
ENTERED AT 10:19:53 ON 03 NOV 2005
          D IBIB ED AB 8

FILE 'STNGUIDE' ENTERED AT 10:19:57 ON 03 NOV 2005

FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX'
ENTERED AT 10:20:49 ON 03 NOV 2005
          D IBIB ED AB HITSTR HITIND 9-18

FILE 'STNGUIDE' ENTERED AT 10:20:54 ON 03 NOV 2005

FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX'
ENTERED AT 10:22:18 ON 03 NOV 2005
          D IBIB AB HITSTR KWIC 19

FILE 'STNGUIDE' ENTERED AT 10:22:19 ON 03 NOV 2005

FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX'
ENTERED AT 10:22:36 ON 03 NOV 2005
          D IBIB AB HITSTR KWIC 20-25

FILE 'STNGUIDE' ENTERED AT 10:22:41 ON 03 NOV 2005

FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX'
ENTERED AT 10:23:40 ON 03 NOV 2005
          D IALL ABEQ TECH ABEX 26-27

FILE 'STNGUIDE' ENTERED AT 10:23:44 ON 03 NOV 2005
          D QUE L65

FILE 'HCAPLUS, SCISEARCH' ENTERED AT 10:24:44 ON 03 NOV 2005
          D IBIB ED AB L65 1-5

FILE 'STNGUIDE' ENTERED AT 10:24:44 ON 03 NOV 2005

FILE 'STNGUIDE' ENTERED AT 10:25:31 ON 03 NOV 2005
          D QUE STAT L14
          D QUE STAT L15
          D QUE STAT L17
          D QUE STAT L22
          D QUE STAT L25
          D QUE STAT L26
          D QUE STAT L31
          D L39
          D QUE NOS L37
          D QUE NOS L44
          D QUE L53
          D QUE L65


FILE HOME

FILE HCAPLUS

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FILE COVERS 1907 - 3 Nov 2005 VOL 143 ISS 19
FILE LAST UPDATED: 2 Nov 2005 (20051102/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE WPIX
FILE LAST UPDATED: 1 NOV 2005 <20051101/UP>
MOST RECENT DERWENT UPDATE: 200570 <200570/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE, PLEASE VISIT:
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FOR FURTHER DETAILS: http://www.thomsonderwent.com/dwpifv <<<

>>> THE CPI AND EPI MANUAL CODES HAVE BEEN REVISED FROM UPDATE 200501. PLEASE CHECK:
http://thomsonderwent.com/support/dwpiref/reftools/classification/code-rev FOR DETAILS. <<<

FILE REGISTRY
Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 1 NOV 2005 HIGHEST RN 866526-24-1
DICTIONARY FILE UPDATES: 1 NOV 2005 HIGHEST RN 866526-24-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

****
* *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
* *

****

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

FILE STNGUIDE
FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Oct 28, 2005 (20051028/UP).

FILE LREGISTRY
LREGISTRY IS A STATIC LEARNING FILE

NEW CAS INFORMATION USE POLICIES, ENTER HELP USAGETERMS FOR DETAILS.

FILE CASREACT

FILE CONTENT:1840 - 30 Oct 2005 VOL 143 ISS 18

New CAS Information Use Policies, enter HELP USAGETERMS for details.

****
* *
* CASREACT now has more than 9.2 million reactions *
* *
****

Some CASREACT records are derived from the ZIC/VINITI database (1974-1991) provided by InfoChem, INPI data prior to 1986, and Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE CHEMINFORMRX
FILE LAST UPDATED: 15 SEP 2005 <20050915/UP>

>>> CAS Registry Numbers are available for
substances prior to 1995 <<<

FILE BEILSTEIN
FILE LAST UPDATED ON OCTOBER 10, 2005

FILE COVERS 1771 TO 2005.
FILE CONTAINS 9,363,954 SUBSTANCES

>>>PLEASE NOTE: Reaction Data and substance data are stored in separate documents and can not be searched together in one query. Reaction data for BEILSTEIN compounds may be displayed immediately with the display codes PRE (preparations) and REA

(reactions). A substance answer set retrieved after the search for a chemical name, a compounds with available reaction information by combining with PRE/FA, REA/FA or more generally with RX/FA. The BEILSTEIN Registry Number (BRN) is the link between a BEILSTEIN compound and belonging reactions. For mo detailed reaction searches BRNs can be searched as reaction partner BRNs Reactant BRN (RX.RBRN) or Product BRN (RX.PBRN).<<<

>>> FOR SEARCHING PREPARATIONS SEE HELP PRE <<<

****
* PLEASE NOTE THAT THERE ARE NO FORMATS FREE OF COST. *
* SET NOTICE FEATURE: THE COST ESTIMATES CALCULATED FOR SET NOTICE *
* ARE BASED ON THE HIGHEST PRICE CATEGORY. THEREFORE; THESE *
* ESTIMATES MAY NOT REFLECT THE ACTUAL COSTS. *
* FOR PRICE INFORMATION SEE HELP COST *
****

NEW

*** PATENT NUMBERS (PN) AND BABS ACCESSION NUMBERS (BABSAN) CAN NOW BE SEARCHED, SELECTED AND TRANSFERRED.**

*** NEW DISPLAY FORMATS ALLREF, ALLP AND BABSAN SHOW ALL REFERENCES, ALL PATENT REFERENCES, OR ALL BABS ACCESSION NUMBERS FOR A COMPOUND AT A GLANCE.**

FILE BABS
FILE LAST UPDATED: 10 OCT 2005 <20051010/UP>
FILE COVERS 1980 TO DATE.

FILE CAOLD
FILE COVERS 1907-1966
FILE LAST UPDATED: 01 May 1997 (19970501/UP)

This file contains CAS Registry Numbers for easy and accurate substance identification. Title keywords, authors, patent assignees, and patent information, e.g., patent numbers, are now searchable from 1907-1966. TIFF images of CA abstracts printed between 1907-1966 are available in the PAGE display formats.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file supports REG1stRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

FILE TOXCENTER

FILE COVERS 1907 TO 1 Nov 2005 (20051101/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TOXCENTER has been enhanced with new files segments and search fields. See HELP CONTENT for more information.

TOXCENTER thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary. See http://www.nlm.nih.gov/mesh/ and http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html for a

description of changes.

FILE USPATFULL
FILE COVERS 1971 TO PATENT PUBLICATION DATE: 1 Nov 2005 (20051101/PD)
FILE LAST UPDATED: 1 Nov 2005 (20051101/ED)
HIGHEST GRANTED PATENT NUMBER: US6961956
HIGHEST APPLICATION PUBLICATION NUMBER: US2005241041
CA INDEXING IS CURRENT THROUGH 1 Nov 2005 (20051101/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 1 Nov 2005 (20051101/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Aug 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Aug 2005

>>> USPAT2 is now available. USPATFULL contains full text of the <<<
>>> original, i.e., the earliest published granted patents or <<<
>>> applications. USPAT2 contains full text of the latest US <<<
>>> publications, starting in 2001, for the inventions covered in <<<
>>> USPATFULL. A USPATFULL record contains not only the original <<<
>>> published document but also a list of any subsequent <<<
>>> publications. The publication number, patent kind code, and <<<
>>> publication date for all the US publications for an invention <<<
>>> are displayed in the PI (Patent Information) field of USPATFULL <<<
>>> records and may be searched in standard search fields, e.g., /PN, <<<
>>> /PK, etc. <<<

>>> USPATFULL and USPAT2 can be accessed and searched together <<<
>>> through the new cluster USPATALL. Type FILE USPATALL to <<<
>>> enter this cluster. <<<
>>> <<<
>>> Use USPATALL when searching terms such as patent assignees, <<<
>>> classifications, or claims, that may potentially change from <<<
>>> the earliest to the latest publication. <<<

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE USPAT2

FILE COVERS 2001 TO PUBLICATION DATE: 1 Nov 2005 (20051101/PD)
FILE LAST UPDATED: 1 Nov 2005 (20051101/ED)
HIGHEST GRANTED PATENT NUMBER: US2004245380
HIGHEST APPLICATION PUBLICATION NUMBER: US2005240763
CA INDEXING IS CURRENT THROUGH 1 Nov 2005 (20051101/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 1 Nov 2005 (20051101/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Aug 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Aug 2005

USPAT2 is a companion file to USPATFULL. USPAT2 contains full text of the latest US publications, starting in 2001, for the inventions covered in USPATFULL. USPATFULL contains full text of the original published US patents from 1971 to date and the original applications from 2001. In addition, a USPATFULL record for an invention contains a complete list of publications that may be searched in standard search fields, e.g., /PN, /PK, etc.

USPATFULL and USPAT2 can be accessed and searched together through the new cluster USPATALL. Type FILE USPATALL to enter this cluster.

Use USPATALL when searching terms such as patent assignees, classifications, or claims, that may potentially change from the earliest to the latest publication.

FILE IFICDB
FILE COVERS 1950 TO PATENT PUBLICATION DATE: 1 Nov 2005 (20051101/PD)
FILE LAST UPDATED: 2 Nov 2005 (20051102/ED)
HIGHEST GRANTED PATENT NUMBER: US6961956
HIGHEST APPLICATION PUBLICATION NUMBER: US2005241041
UNITERM INDEXING LAST UPDATED: 31 Oct 2005 (20051031/UP)
INDEXING CURRENT THROUGH PAT PUB DATE: 27 May 2004 (20040527/PD)

IFICDB reloaded on 9/22/05. Enter HELP RLOAD for details.

The (S) proximity operator should be used to correctly link chemical uniterms with role numbers. Enter 'HELP (S)' at an arrow prompt for more information on using the (S) operator when searching this file.

FILE BIOSIS
FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 3 November 2005 (20051103/ED)

FILE RELOADED: 19 October 2003.

FILE MEDLINE
FILE LAST UPDATED: 1 NOV 2005 (20051101/UP).. FILE COVERS 1950 TO DATE.

On December 19, 2004, the 2005 MeSH terms were loaded.

The MEDLINE reload for 2005 is now available. For details enter HELP RLOAD at an arrow promt (=>). See also:

http://www.nlm.nih.gov/mesh/
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

OLDMEDLINE now back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE EMBASE
FILE COVERS 1974 TO 27 Oct 2005 (20051027/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE CANCERLIT
FILE COVERS 1963 TO 15 Nov 2002 (20021115/ED)

On July 28, 2002, CANCERLIT was reloaded. See HELP RLOAD for details.

CANCERLIT thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2002 vocabulary. Enter HELP THESAURUS for details.

This file contains CAS Registry Numbers for easy and accurate substance

identification.

FILE PASCAL
FILE LAST UPDATED: 31 OCT 2005 <20051031/UP>
FILE COVERS 1977 TO DATE.

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION IS AVAILABLE
IN THE BASIC INDEX (/BI) FIELD <<<

FILE JICST-EPLUS
FILE COVERS 1985 TO 24 OCT 2005 (20051024/ED)

THE JICST-EPLUS FILE HAS BEEN RELOADED TO REFLECT THE 1999 CONTROLLED TERM (/CT) THESAURUS RELOAD.

FILE SCISEARCH

FILE COVERS 1974 TO 28 Oct 2005 (20051028/ED)

SCISEARCH has been reloaded, see HELP RLOAD for details.

FILE CONF
FILE LAST UPDATED: 28 OCT 2005 <20051028/UP>
FILE COVERS 1976 TO DATE.

FILE CONFSCI
FILE COVERS 1973 TO 25 May 2005 (20050525/ED)

FILE DISSABS
FILE COVERS 1861 TO 26 OCT 2005 (20051026/ED)

=>

=> fil lreg
FILE '[redacted]NTERED AT 10:06:49 ON 03 NOV 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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LREGISTRY IS A STATIC LEARNING FILE

NEW CAS INFORMATION USE POLICIES, ENTER HELP USAGETERMS FOR DETAILS.

=> fil reg
FILE [redacted]ERED AT 10:06:52 ON 03 NOV 2005
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 1 NOV 2005 HIGHEST RN 866526-24-1
DICTIONARY FILE UPDATES: 1 NOV 2005 HIGHEST RN 866526-24-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

```
**********************************************************************
*                                                                    *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005.  A new display format, IDERL, is now    *
* available and contains the CA role and document type information. *
*                                                                    *
**********************************************************************
```

Structure search iteration limits have been increased. See HELP SLIMITS
for details.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=> fil casreact
FILE '[redacted]NTERED AT 10:06:58 ON 03 NOV 2005
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26, 1996), unless otherwise indicated in the original publications.

FILE CONTENT:1840 - 30 Oct 2005 VOL 143 ISS 18

New CAS Information Use Policies, enter HELP USAGETERMS for details.

```
**********************************************************
*                                                        *
*     CASREACT now has more than 9.2 million reactions   *
*                                                        *
**********************************************************
```

Some CASREACT records are derived from the ZIC/VINITI database (1974-1991) provided by InfoChem, INPI data prior to 1986, and Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich.

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> fil cheminformrx
FILE [redacted]TERED AT 10:07:05 ON 03 NOV 2005
COPYRIGHT (C) FIZ-CHEMIE BERLIN

FILE LAST UPDATED: 15 SEP 2005       <20050915/UP>

>>> CAS Registry Numbers are available for
    substances prior to 1995   <<<

=> fil beilstein
FILE [redacted]TERED AT 10:07:14 ON 03 NOV 2005
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licensed to Beilstein GmbH and MDL Information Systems GmbH

FILE LAST UPDATED ON OCTOBER 10, 2005

FILE COVERS 1771 TO 2005.
*** FILE CONTAINS  9,363,954 SUBSTANCES ***

>>>PLEASE NOTE: Reaction Data and substance data are stored in
   separate documents and can not be searched together in one query.
   Reaction data for BEILSTEIN compounds may be displayed
   immediately with the display codes PRE (preparations) and REA
   (reactions).  A substance answer set retrieved after the search
   for a chemical name, a compounds with available reaction
   information by combining with PRE/FA, REA/FA or more generally
   with RX/FA. The BEILSTEIN Registry Number (BRN) is the link
   between a BEILSTEIN compound and belonging reactions. For mo
   detailed reaction searches BRNs can be searched as reaction
   partner BRNs Reactant BRN (RX.RBRN) or Product BRN (RX.PBRN).<<<

>>> FOR SEARCHING PREPARATIONS SEE HELP PRE  <<<

**********************************************************************
* PLEASE NOTE THAT THERE ARE NO FORMATS FREE OF COST.                 *
* SET NOTICE FEATURE: THE COST ESTIMATES CALCULATED FOR SET NOTICE    *
* ARE BASED ON THE HIGHEST PRICE CATEGORY. THEREFORE; THESE           *
* ESTIMATES MAY NOT REFLECT THE ACTUAL COSTS.                         *
* FOR PRICE INFORMATION SEE HELP COST                                 *
**********************************************************************
    NEW
* PATENT NUMBERS (PN) AND BABS ACCESSION NUMBERS (BABSAN) CAN NOW BE
  SEARCHED, SELECTED AND TRANSFERRED.
* NEW DISPLAY FORMATS ALLREF, ALLP AND BABSAN SHOW ALL REFERENCES,
  ALL PATENT REFERENCES, OR ALL BABS ACCESSION NUMBERS FOR A
```

COMPOUND AT A GLANCE.

=> fil babs
FILE [redacted]ENTERED AT 10:07:19 ON 03 NOV 2005
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licensed to Beilstein Chemiedaten & Software GmbH and MDL Information Systems GmbH

FILE LAST UPDATED: 10 OCT 2005 <20051010/UP>
FILE COVERS 1980 TO DATE.

=> fil hcap
FILE [redacted]TERED AT 10:07:27 ON 03 NOV 2005
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FILE COVERS 1907 - 3 Nov 2005 VOL 143 ISS 19
FILE LAST UPDATED: 2 Nov 2005 (20051102/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> fil uspatfull
FILE [redacted]ERED AT 10:07:31 ON 03 NOV 2005
CA INDEXING COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 1 Nov 2005 (20051101/PD)
FILE LAST UPDATED: 1 Nov 2005 (20051101/ED)
HIGHEST GRANTED PATENT NUMBER: US6961956
HIGHEST APPLICATION PUBLICATION NUMBER: US2005241041
CA INDEXING IS CURRENT THROUGH 1 Nov 2005 (20051101/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 1 Nov 2005 (20051101/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Aug 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Aug 2005

>>> USPAT2 is now available. USPATFULL contains full text of the <<<
>>> original, i.e., the earliest published granted patents or <<<
>>> applications. USPAT2 contains full text of the latest US <<<
>>> publications, starting in 2001, for the inventions covered in <<<
>>> USPATFULL. A USPATFULL record contains not only the original <<<
>>> published document but also a list of any subsequent <<<
>>> publications. The publication number, patent kind code, and <<<
>>> publication date for all the US publications for an invention <<<
>>> are displayed in the PI (Patent Information) field of USPATFULL <<<
>>> records and may be searched in standard search fields, e.g., /PN, <<<
>>> /PK, etc. <<<

>>> USPATFULL and USPAT2 can be accessed and searched together <<<
>>> through the new cluster USPATALL. Type FILE USPATALL to <<<
>>> enter this cluster. <<<
>>> <<<
>>> Use USPATALL when searching terms such as patent assignees, <<<
>>> classifications, or claims, that may potentially change from <<<
>>> the earliest to the latest publication. <<<

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> fil uspat2
FILE [redacted]NTERED AT 10:07:35 ON 03 NOV 2005
CA INDEXING COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

FILE COVERS 2001 TO PUBLICATION DATE: 1 Nov 2005 (20051101/PD)
FILE LAST UPDATED: 1 Nov 2005 (20051101/ED)
HIGHEST GRANTED PATENT NUMBER: US2004245380
HIGHEST APPLICATION PUBLICATION NUMBER: US2005240763
CA INDEXING IS CURRENT THROUGH 1 Nov 2005 (20051101/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 1 Nov 2005 (20051101/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Aug 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Aug 2005

USPAT2 is a companion file to USPATFULL. USPAT2 contains full text of the latest US publications, starting in 2001, for the inventions covered in USPATFULL. USPATFULL contains full text of the original published US patents from 1971 to date and the original applications from 2001. In addition, a USPATFULL record for an invention contains a complete list of publications that may be searched in standard search fields, e.g., /PN, /PK, etc.

USPATFULL and USPAT2 can be accessed and searched together through the new cluster USPATALL. Type FILE USPATALL to enter this cluster.

Use USPATALL when searching terms such as patent assignees, classifications, or claims, that may potentially change from the earliest to the latest publication.

=> fil caold
FILE [redacted]NTERED AT 10:07:39 ON 03 NOV 2005
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FILE COVERS 1907-1966
FILE LAST UPDATED: 01 May 1997 (19970501/UP)

This file contains CAS Registry Numbers for easy and accurate substance identification. Title keywords, authors, patent assignees, and patent information, e.g., patent numbers, are now searchable from 1907-1966. TIFF images of CA abstracts printed between 1907-1966 are available in the PAGE display formats.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file supports REG1stRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for

more information.

=> fil toxcenter
FILE [redacted]TERED AT 10:07:45 ON 03 NOV 2005
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FILE COVERS 1907 TO 1 Nov 2005 (20051101/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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TOXCENTER has been enhanced with new files segments and search fields. See HELP CONTENT for more information.

TOXCENTER thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary. See http://www.nlm.nih.gov/mesh/ and http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html for a description of changes.

=> fil ificdb
FILE [redacted]TERED AT 10:07:49 ON 03 NOV 2005
COPYRIGHT (C) 2005 IFI CLAIMS(R) Patent Services (IFI)

FILE COVERS 1950 TO PATENT PUBLICATION DATE: 1 Nov 2005 (20051101/PD)
FILE LAST UPDATED: 2 Nov 2005 (20051102/ED)
HIGHEST GRANTED PATENT NUMBER: US6961956
HIGHEST APPLICATION PUBLICATION NUMBER: US2005241041
UNITERM INDEXING LAST UPDATED: 31 Oct 2005 (20051031/UP)
INDEXING CURRENT THROUGH PAT PUB DATE: 27 May 2004 (20040527/PD)

IFICDB reloaded on 9/22/05. Enter HELP RLOAD for details.

The (S) proximity operator should be used to correctly link chemical uniterms with role numbers. Enter 'HELP (S)' at an arrow prompt for more information on using the (S) operator when searching this file.

=> fil wpix
FILE [redacted]TERED AT 10:07:54 ON 03 NOV 2005
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FILE LAST UPDATED: 1 NOV 2005 <20051101/UP>
MOST RECENT DERWENT UPDATE: 200570 <200570/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE, PLEASE VISIT:
http://www.stn-international.de/training_center/patents/stn_guide.pdf <<<

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE http://thomsonderwent.com/coverage/latestupdates/ <<<

>>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER GUIDES, PLEASE VISIT:
http://thomsonderwent.com/support/userguides/ <<<

>>> NEW! FAST-ALERTING ACCESS TO NEWLY-PUBLISHED PATENT DOCUMENTATION NOW AVAILABLE IN DERWENT WORLD PATENTS INDEX

FIRST VIEW - FILE WPIFV.
FOR FURTHER DETAILS: http://www.thomsonderwent.com/dwpifv <<<

>>> THE CPI AND EPI MANUAL CODES HAVE BEEN REVISED FROM UPDATE 200501.
PLEASE CHECK:
http://thomsonderwent.com/support/dwpiref/reftools/classification/code-revision/
FOR DETAILS. <<<

=> fil biosis
FILE [redacted]TERED AT 10:08:02 ON 03 NOV 2005
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FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 3 November 2005 (20051103/ED)

FILE RELOADED: 19 October 2003.

=> fil medlin
FILE '[redacted]NTERED AT 10:08:05 ON 03 NOV 2005

FILE LAST UPDATED: 1 NOV 2005 (20051101/UP). FILE COVERS 1950 TO DATE.

On December 19, 2004, the 2005 MeSH terms were loaded.

The MEDLINE reload for 2005 is now available. For details enter HELP
RLOAD at an arrow promt (=>). See also:

http://www.nlm.nih.gov/mesh/
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

OLDMEDLINE now back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
MeSH 2005 vocabulary.

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> fil embase
FILE [redacted]NTERED AT 10:08:08 ON 03 NOV 2005
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FILE COVERS 1974 TO 27 Oct 2005 (20051027/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> fil cancerlit
FILE [redacted]NTERED AT 10:08:11 ON 03 NOV 2005

FILE COVERS 1963 TO 15 Nov 2002 (20021115/ED)

On July 28, 2002, CANCERLIT was reloaded. See HELP RLOAD for details.

CANCERLIT thesauri in the /CN, /CT, and /MN fields incorporate the

MeSH 2002 vocabulary. Enter HELP THESAURUS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> fil pascal
FILE '[redacted]NTERED AT 10:08:15 ON 03 NOV 2005

FILE LAST UPDATED: 31 OCT 2005 <20051031/UP>
FILE COVERS 1977 TO DATE.

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION IS AVAILABLE
IN THE BASIC INDEX (/BI) FIELD <<<

=> fil jicst
FILE '[redacted]NTERED AT 10:08:18 ON 03 NOV 2005

FILE COVERS 1985 TO 24 OCT 2005 (20051024/ED)

THE JICST-EPLUS FILE HAS BEEN RELOADED TO REFLECT THE 1999 CONTROLLED TERM (/CT) THESAURUS RELOAD.

=> fil scisearch
FILE 'SCISEARCH' ENTERED AT 10:08:25 ON 03 NOV 2005

FILE COVERS 1974 TO 28 Oct 2005 (20051028/ED)

SCISEARCH has been reloaded, see HELP RLOAD for details.

=> fil wpix
FILE [redacted]NTERED AT 10:08:29 ON 03 NOV 2005

FILE LAST UPDATED: 1 NOV 2005 <20051101/UP>
MOST RECENT DERWENT UPDATE: 200570 <200570/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
PLEASE VISIT:
http://www.stn-international.de/training_center/patents/stn_guide.pdf <<<

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
http://thomsonderwent.com/coverage/latestupdates/ <<<

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GUIDES, PLEASE VISIT:
http://thomsonderwent.com/support/userguides/ <<<

>>> NEW! FAST-ALERTING ACCESS TO NEWLY-PUBLISHED PATENT
DOCUMENTATION NOW AVAILABLE IN DERWENT WORLD PATENTS INDEX
FIRST VIEW - FILE WPIFV.
FOR FURTHER DETAILS: http://www.thomsonderwent.com/dwpifv <<<

>>> THE CPI AND EPI MANUAL CODES HAVE BEEN REVISED FROM UPDATE 200501.
PLEASE CHECK:
http://thomsonderwent.com/support/dwpiref/reftools/classification/code-revision/
FOR DETAILS. <<<

=> fil conf
FILE '[redacted]TERED AT 10:08:32 ON 03 NOV 2005
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FILE LAST UPDATED: 28 OCT 2005 <20051028/UP>
FILE COVERS 1976 TO DATE.

=> fil confsci
FILE '[redacted]NTERED AT 10:08:38 ON 03 NOV 2005
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FILE COVERS 1973 TO 25 May 2005 (20050525/ED)

=> fil dissabs
FILE '[redacted]NTERED AT 10:08:41 ON 03 NOV 2005
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FILE COVERS 1861 TO 26 OCT 2005 (20051026/ED)

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PARTICULAR PURPOSE, AND SHALL NOT BE LIABLE FOR DAMAGES OF ANY
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=> file stnguide
FILE 'STNGUIDE' ENTERED AT 10:08:44 ON 03 NOV 2005
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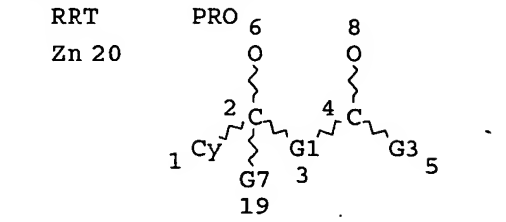
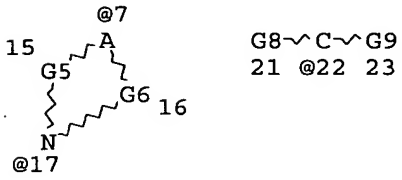
COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE
AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Oct 28, 2005 (20051028/UP).

=> d que stat l14

[redacted]





VAR G1=CH2/9/22/11
VAR G2=AK/CY
VAR G3=12/13
VAR G4=AK/CY
REP G5=(0-4) A
REP G6=(0-4) A
VAR G7=7/17
VAR G8=AK/CY
VAR G9=AK/CY
NODE ATTRIBUTES:
NSPEC IS R AT 11
NSPEC IS RC AT 20
CONNECT IS E1 RC AT 6
CONNECT IS E1 RC AT 8
CONNECT IS E1 RC AT 12
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 1
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 22

STEREO ATTRIBUTES: NONE

[redacted]

100.0% DONE 12507 VERIFIED 17 HIT RXNS 3 DOCS
SEARCH TIME: 00.00.02

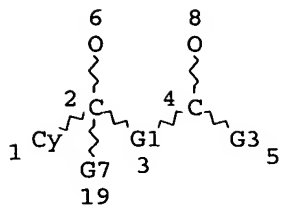
=> d que nos l15

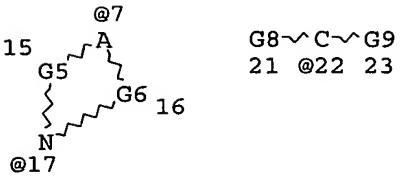
[redacted]

L15 3 SEA FILE=CHEMINFO PLU=ON L14

=> d que stat l17

[redacted] STR





VAR G1=CH2/9/22/11
VAR G2=AK/CY
VAR G3=12/13
VAR G4=AK/CY
REP G5=(0-4) A
REP G6=(0-4) A
VAR G7=7/17
VAR G8=AK/CY
VAR G9=AK/CY
NODE ATTRIBUTES:
NSPEC IS R AT 11
CONNECT IS E1 RC AT 6
CONNECT IS E1 RC AT 8
CONNECT IS E1 RC AT 12
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 1
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 21

STEREO ATTRIBUTES: NONE

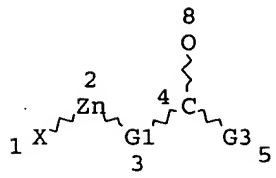
[redacted]

100.0% PROCESSED 168333 ITERATIONS (12 INCOMPLETE) 107 ANSWERS
SEARCH TIME: 00.02.10

=> d que stat l22

[redacted]

CH~G2 C @11 O @12 O~G4 G8~C~G9
@9 10 @13 14 21 @22 23



VAR G1=CH2/9/22/11
VAR G2=AK/CY
VAR G3=12/13
VAR G4=AK/CY
VAR G8=AK/CY
VAR G9=AK/CY
NODE ATTRIBUTES:
NSPEC IS R AT 11
CONNECT IS E1 RC AT 8
CONNECT IS E1 RC AT 12
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE
L22 [redacted]

100.0% PROCESSED 308 ITERATIONS 29 ANSWERS
SEARCH TIME: 00.00.03

=> d que stat l25
L23 103 SEA FILE=BEILSTEIN ABB=ON PLU=ON (1000498[redacted] OR
1029091/RX.PBRN OR 227218/RX.PBRN OR 228022/RX.PBRN OR
256437/RX.PBRN OR 256517/RX.PBRN OR 280315/RX.PBRN OR 280375/RX
.PBRN OR 2944799/RX.PBRN OR 2944800/RX.PBRN OR 2945594/RX.PBRN
OR 2945595/RX.PBRN OR 2946140/RX.PBRN OR 2946141/RX.PBRN OR
302971/RX.PBRN OR 303014/RX.PBRN OR 3509316/RX.PBRN OR
4004404/RX.PBRN OR 4008110/RX.PBRN OR 4009312/RX.PBRN OR
4013992/RX.PBRN OR 4014062/RX.PBRN OR 4014085/RX.PBRN OR
4018446/RX.PBRN OR 402369/RX.PBRN OR 402371/RX.PBRN OR
4030949/RX.PBRN OR 403535/RX.PBRN OR 4060876/RX.PBRN OR
4060897/RX.PBRN OR 4068653/RX.PBRN OR 4076524/RX.PBRN OR
411907/RX.PBRN OR 412001/RX.PBRN OR 412130/RX.PBRN OR 412307/RX
.PBRN OR 415011/RX.PBRN OR 4196151/RX.PBRN OR 4197922/RX.PBRN
OR 4198709/RX.PBRN OR 4199425/RX.PBRN OR 4200433/RX.PBRN OR
4200739/RX.PBRN OR 4201346/RX.PBRN OR 4202427/RX.PBRN OR
4202615/RX.PBRN OR 4202749/RX.PBRN OR 4203423/RX.PBRN OR
4203842/RX.PBRN OR 4204078/RX.PBRN OR 4204417/RX.PBRN OR
4205443/RX.PBRN OR 4206160/RX.PBRN OR 4206744/RX.PBRN OR

4207231/RX.PBRN OR 4207532/RX.PBRN OR 4207737/RX.PBRN OR
4207964/RX.PBRN OR 4209827/RX.PBRN OR 4211439/RX.PBRN OR
4211896/RX.PBRN OR 4212207/RX.PBRN OR 423298/RX.PBRN OR
4236568/RX.PBRN OR 4236569/RX.PBRN OR 423670/RX.PBRN OR
4237513/RX.PBRN OR 4237514/RX.PBRN OR 4237677/RX.PBRN OR
4237678/RX.PBRN OR 4271435/RX.PBRN OR 4541467/RX.PBRN OR
4554375/RX.PBRN OR 4560363/RX.PBRN OR 4579761/RX.PBRN OR
479569/RX.PBRN OR 483055/RX.PBRN OR 5616843/RX.PBRN OR
5621768/RX.PBRN OR 5701651/RX.PBRN OR 5701869/RX.PBRN OR
6456290/RX.PBRN OR 6484924/RX.PBRN OR 6665902/RX.PBRN OR
6670373/RX.PBRN OR 7347326/RX.PBRN OR 7347386/RX.PBRN OR
7347522/RX.PBRN OR 7350206/RX.PBRN OR 7350207/RX.PBRN OR
7350208/RX.PBRN OR 7775119/RX.PBRN OR 8293161/RX.PBRN OR
831769/RX.PBRN OR 867903/RX.PBRN OR 92

L24 364 SEA FILE=BEILSTEIN ABB=ON PLU=ON (3935224/RX.RBRN OR
3937957/RX.RBRN OR 3939779/[redacted]OR 3939846/RX.RBRN OR
3940561/RX.RBRN OR 3940563/RX.RBRN OR 3944532/RX.RBRN OR
4126535/RX.RBRN OR 4128087/RX.RBRN OR 4128089/RX.RBRN OR
4129730/RX.RBRN OR 4370797/RX.RBRN OR 4440098/RX.RBRN OR
4955879/RX.RBRN OR 5535799/RX.RBRN OR 5923159/RX.RBRN OR
5929986/RX.RBRN OR 6054715/RX.RBRN OR 6694836/RX.RBRN OR
6695090/RX.RBRN OR 6695492/RX.RBRN OR 6776280/RX.RBRN OR
6967375/RX.RBRN OR 6967709/RX.RBRN OR 7012013/RX.RBRN OR
7700987/RX.RBRN OR 8870278/RX.RBRN OR 9255691/RX.RBRN OR
9757456/RX.RBRN)

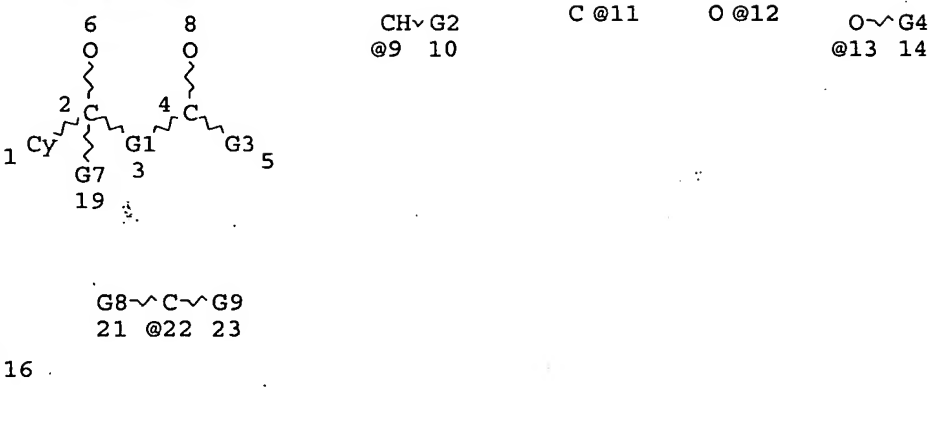
[redacted]

=> d que stat l26

[redacted]

=> d que stat l31

[redacted]



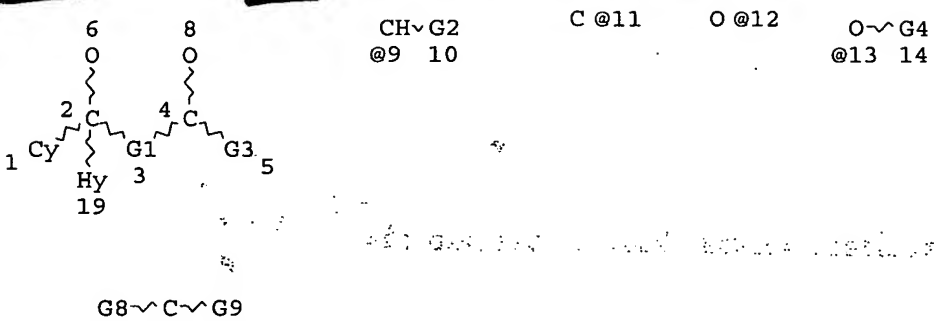
VAR G1=CH2/9/22/11
VAR G2=AK/CY
VAR G3=12/13
VAR G4=AK/CY
REP G5=(0-4) A
REP G6=(0-4) A
VAR G7=7/17
VAR G8=AK/CY

VAR G9=AK/CY
NODE ATTRIBUTES:
NSPEC IS R AT 11
CONNECT IS E1 RC AT 6
CONNECT IS E1 RC AT 8
CONNECT IS E1 RC AT 12
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 1
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 21

STEREO ATTRIBUTES: NONE

[redacted]



VAR G1=CH2/9/22/11
VAR G2=AK/CY
VAR G3=12/13
VAR G4=AK/CY
VAR G8=AK/CY
VAR G9=AK/CY
NODE ATTRIBUTES:
NSPEC IS R AT 11
CONNECT IS E1 RC AT 6
CONNECT IS E1 RC AT 8
CONNECT IS E1 RC AT 12
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 1
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE

[redacted]

100.0% PROCESSED 119 ITERATIONS 72 ANSWERS
SEARCH TIME: 00.00.01

=> d 139 1-10
[redacted] 1- LC : 10 TERMS

```
TERM #    # OCC   # DOC   % DOC LC
------ ------- ------ ------ --------------
     1       68     68  94.44 CA
     2       68     68  94.44 CAPLUS
     3       26     26  36.11 [redacted]
     4       25     25  34.72 [redacted]
     5       20     20  27.78 [redacted]
     6       19     19  26.39 CASREACT
     7        8      8  11.11 [redacted]
     8        1      1   1.39 [redacted]
     9        1      1   1.39 IFIPAT
    10        1      1   1.39 IFIUDB
*********  END OF L39***


=> d que nos l37
L16             STR
L28         119 SEA FILE=REGISTRY SSS FUL L16
L29             STR
L31          72 SEA FILE=REGISTRY SUB=L28 SSS FUL L29
L32          39 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L31
L33          25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  [redacted](L)[redacted]
L34           6 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L33 AND [redacted]
L35           9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L32 AND [redacted]
L36           6 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L33 AND L35
[redacted]

=> d his l44

     (FILE '[redacted] ENTERED AT
     09:31:27 ON 03 NOV 2005)
L44          13 S L42-L43

=> d que nos l44
L16             STR
L28         119 SEA FILE=REGISTRY SSS FUL L16
L29             STR
L31          72 SEA FILE=REGISTRY SUB=L28 SSS FUL L29
[redacted]
L41          35 DUP REM L40 (1 DUPLICATE REMOVED)
L42          10 SEA L41 AND [redacted]
L43           7 SEA L41 AND [redacted]
[redacted]


=> d que l53
L45       91627 SEA FILE=WPIX ABB=ON  PLU=ON  ((F50? OR F51? OR F52? OR F53?
                OR F54? OR F55? OR F57? OR F58? OR F590)(P) M53? (P) (M710 OR
                M720))/M0,M1,M2,M3,M4,M5,M6
L48           54 SEA FILE=WPIX ABB=ON  PLU=ON  ?REFORMATSK?/BIX
L52           25 SEA FILE=WPIX ABB=ON  PLU=ON  L48 (L) (ZN? OR ?ZINC?)/BIX
[redacted]

=> dup rem l14 l15 l26 l37 l44 l53
DUPLICATE IS NOT AVAILABLE IN 'CHEMINFORMRX, CAOLD'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
FILE 'CASREACT' ENTERED AT 10:12:56 ON 03 NOV 2005
```

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FILE 'WPIX' ENTERED AT 10:12:56 ON 03 NOV 2005
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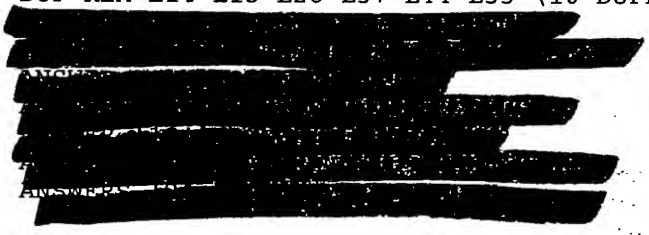
PROCESSING COMPLETED FOR L14
PROCESSING COMPLETED FOR L15
PROCESSING COMPLETED FOR L26
PROCESSING COMPLETED FOR L37
PROCESSING COMPLETED FOR L44
PROCESSING COMPLETED FOR L53
[redacted] 27 DUP REM L14 L15 L26 L37 L44 L53 (10 DUPLICATES REMOVED)



=> file stnguide
FILE [redacted] ENTERED AT 10:13:30 ON 03 NOV 2005
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
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AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Oct 28, 2005 (20051028/UP).

=> d rx l25 1
YOU HAVE REQUESTED DATA FROM FILE 'BEILSTEIN' - CONTINUE? (Y)/N:y

[redacted]IN COPYRIGHT 2005 BEILSTEIN MDL on STN

Reaction:
RX

Reaction ID (.ID):	9139683
Reactant BRN (.RBRN):	9224241, 4370797
Reactant (.RCT):	naphthalen-2-yl-(1-trityl-1H-imidazol-4-yl)-methanone, tert-butoxycarbonylmethylzinc bromide
Product BRN (.PBRN):	9234966, 9234965
Product (.PRO):	3-hydroxy-3-naphthalen-2-yl-3-(1-trityl-1H-imidazol-4-yl)-propionic acid tert-butyl ester, 3-hydroxy-3-naphthalen-2-yl-3-(1-trityl-1H-imidazol-4-yl)-propionic acid tert-butyl ester
No. of React. Details (.NVAR):	1

Reaction Details:
RX

Reaction RID (.RID):	9139683.1
Reaction Classification (.CL):	Preparation
Reagent (.RGT):	cinchonidine, pyridine
Solvent (.SOL):	tetrahydrofuran
Time (.TIM):	4 hour(s)
Temperature (.T):	-40 Cel
Reaction Type (.TYP):	Reformatsky reaction
Note(s) (.COM):	Title compound not separated from byproducts

Reference(s):
1. Oji[redacted]

=> d rx l25 2-7
YOU HAVE REQUESTED DATA FROM FILE 'BEILSTEIN' - CONTINUE? (Y)/N:y

L25 [redacted]COPYRIGHT 2005 BEILSTEIN MDL on STN

Reaction:
RX

Reaction ID (.ID):	9139682
Reactant BRN (.RBRN):	9224241, 4370797
Reactant (.RCT):	naphthalen-2-yl-(1-trityl-1H-imidazol-4-yl)-methanone, tert-butoxycarbonylmethylzinc bromide
Product BRN (.PBRN):	9234965
Product (.PRO):	3-hydroxy-3-naphthalen-2-yl-3-(1-trityl-1H-imidazol-4-yl)-propionic acid tert-butyl ester
No. of React. Details (.NVAR):	1

Reaction Details:
RX

Reaction RID (.RID):	9139682.1
Reaction Classification (.CL):	Preparation
Yield (.YDT):	97 percent (BRN=9234965)
Reagent (.RGT):	cinchonine, pyridine
Solvent (.SOL):	tetrahydrofuran
Time (.TIM):	4 hour(s)
Temperature (.T):	-40 Cel
Reaction Type (.TYP):	Reformatsky reaction
Reference(s):	

1. Ojida, Aki[redacted]akihiro, Org Lett., [redacted]

L25 [redacted] COPYRIGHT 2005 BEILSTEIN MDL on STN

Reaction:
RX

Reaction ID (.ID):	9139681
Reactant BRN (.RBRN):	9224241, 4370797
Reactant (.RCT):	naphthalen-2-yl-(1-trityl-1H-imidazol-4-yl)-methanone, tert-butoxycarbonylmethylzinc bromide
Product BRN (.PBRN):	9233929
Product (.PRO):	3-hydroxy-3-naphthalen-2-yl-3-(1-trityl-1H-imidazol-4-yl)-propionic acid tert-butyl ester
No. of React. Details (.NVAR):	1

Reaction Details:
RX

Reaction RID (.RID):	9139681.1
Reaction Classification (.CL):	Preparation
Yield (.YDT):	99 percent (BRN=9233929)
Reagent (.RGT):	(R)-2-<(E)-3-tert-butylsalicylideneamino>-3-methyl-1-butanol
Solvent (.SOL):	tetrahydrofuran
Reaction Type (.TYP):	Reformatsky reaction
Reference(s):	

1 [redacted]

L25 [redacted] BEILSTEIN COPYRIGHT 2005 BEILSTEIN MDL on STN

Reaction:
RX

Reaction ID (.ID):	9139680
Reactant BRN (.RBRN):	9215007, 4370797
Reactant (.RCT):	phenyl-(1-trityl-1H-imidazol-4-yl)-methanone, tert-butoxycarbonylmethylzinc bromide
Product BRN (.PBRN):	9229074
Product (.PRO):	3-hydroxy-3-phenyl-3-(1-trityl-1H-imidazol-4-yl)-propionic acid tert-butyl ester
No. of React. Details (.NVAR):	1

Reaction Details:
RX

Reaction RID (.RID): 9139680.1
Reaction Classification (.CL): Preparation
Yield (.YDT): 99 percent (BRN=9229074)
Reagent (.RGT): cinchonine, pyridine
Solvent (.SOL): tetrahydrofuran
Time (.TIM): 4 hour(s)
Temperature (.T): -40 Cel
Reaction Type (.TYP): Reformatsky reaction
Reference(s):
[redacted]tt.,
[redacted]

L25 [redacted]PYRIGHT 2005 BEILSTEIN MDL on STN

Reaction:
RX
Reaction ID (.ID): 9134027
Reactant BRN (.RBRN): 2885194, 4370797
Reactant (.RCT): 2-dibenzylamino-1-<2>naphthyl-ethanone, tert-butoxycarbonylmethylzinc bromide
Product BRN (.PBRN): 9228872
Product (.PRO): 4-dibenzylamino-3-hydroxy-3-naphthalen-2-yl-butyric acid tert-butyl ester
No. of React. Details (.NVAR): 1

Reaction Details:
RX
Reaction RID (.RID): 9134027.1
Reaction Classification (.CL): Preparation
Yield (.YDT): 99 percent (BRN=9228872)
Reagent (.RGT): cinchonine, pyridine
Solvent (.SOL): tetrahydrofuran
Time (.TIM): 4 hour(s)
Temperature (.T): -40 Cel
Reaction Type (.TYP): Reformatsky reaction
Reference(s):
1 [redacted]Org Lett.,
[redacted]

L25 [redacted]PYRIGHT 2005 BEILSTEIN MDL on STN

Reaction:
RX
Reaction ID (.ID): 9122631
Reactant BRN (.RBRN): 120283, 4370797
Reactant (.RCT): phenyl-pyridin-2-yl-methanone, tert-butoxycarbonylmethylzinc bromide
Product BRN (.PBRN): 9204209, 9204210
Product (.PRO): 3-hydroxy-3-phenyl-3-pyridin-2-yl-propionic acid tert-butyl ester, 3-hydroxy-3-phenyl-3-pyridin-2-yl-propionic acid tert-butyl ester
No. of React. Details (.NVAR): 1

Reaction Details:
RX
Reaction RID (.RID): 9122631.1
Reaction Classification (.CL): Preparation

Reagent (.RGT): cinchonine, pyridine
Solvent (.SOL): tetrahydrofuran
Time (.TIM): 4 hour(s)
Temperature (.T): -40 Cel
Reaction Type (.TYP): Reformatsky reaction
Note(s) (.COM): Title compound not separated from byproducts
Reference(s):
1. [redacted]

L25 [redacted] OPYRIGHT 2005 BEILSTEIN MDL on STN

Reaction:
RX
Reaction ID (.ID): 3356031
Reactant BRN (.RBRN): 4129730, 3664698, 605437
Reactant (.RCT): zincique du bromacetate d'ethyle, tributylstannyl-acetic acid ethyl ester, carbonochloridic acid methyl ester
Product BRN (.PBRN): 228022, 6670373
Product (.PRO): 3-hydroxy-3-phenyl-3-pyridin-4-yl-propionic acid ethyl ester, 4-(2-ethoxycarbonyl-1-hydroxy-1-phenyl-ethyl)-2-ethoxycarbonylmethyl-2H-pyridine-1-carboxylic acid methyl ester
No. of React. Details (.NVAR): 2

Reaction Details:
RX
Reaction RID (.RID): 3356031.1
Reaction Classification (.CL): Preparation
Yield (.YDT): 40 percent (BRN=6670373), 20 percent (BRN=228022)
Solvent (.SOL): tetrahydrofuran
Time (.TIM): 20 min
Temperature (.T): -40 - 20 Cel
Reference(s):
[redacted]

RX
Reaction RID (.RID): 3356031.2
Reaction Classification (.CL): Preparation
Yield (.YDT): 20 percent (BRN=228022), 40 percent (BRN=6670373)
Solvent (.SOL): tetrahydrofuran
Time (.TIM): 20 min
Temperature (.T): -40 - 20 Cel
Reference(s):
[redacted]

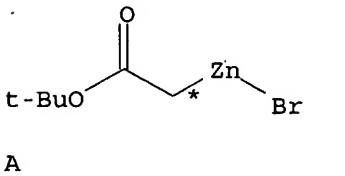
=> => d ibib ed abs hit
YOU HAVE REQUESTED DATA FROM FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX' - CONTINUE? (Y)/N:y

'ED' IS NOT A VALID FORMAT

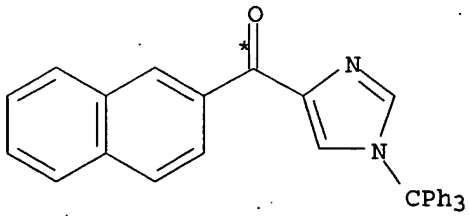
In a multifile environment, a format can only be used if it is valid in at least one of the files. Refer to file specific help messages or the STNGUIDE file for information on formats available in individual files.
REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):ibib abs hit

L67 [redacted]YRIGHT 2005 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 137:262610 CASREACT
TITLE: Highly Enantioselective Reformatskii Reaction of Ketones: Chelation-Assisted Enantioface Discrimination
AUTHOR(S): Ojida, Akio; Yamano, Toru; Taya, Naohiro; Tasaka, Akihiro
CORPORATE SOURCE: Medicinal Chemistry Research Laboratories, Takeda Chemical Industries, Ltd., Osaka, 532-8686, Japan
SOURCE: Organic Letters [redacted]4(18), 3051-3054
CODEN: ORLEF7; ISSN: 1523-7060
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Highly enantioselective Reformatskii reaction of ketones was accomplished using cinchona alkaloids as chiral ligands. Chelation with the sp2-nitrogen adjacent to the reactive carbonyl center contributed to the enantioface discrimination for the high enantioselectivities.
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

RX(1) OF 30 **A** + B ===> **C**...

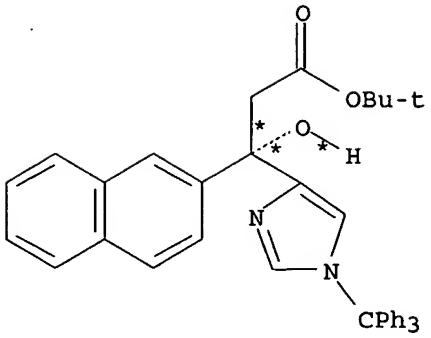


A



B

(1) →



C
YIELD 97%

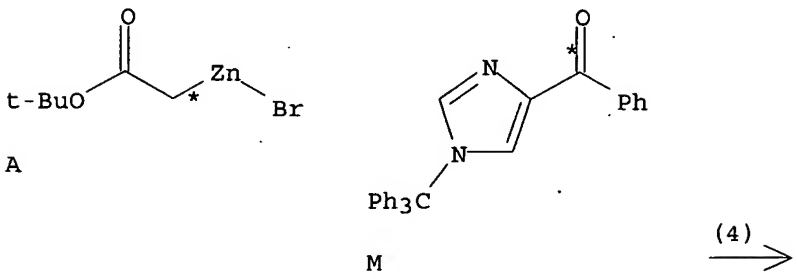
RX(1) RCT A **51656-70-3**

STAGE(1)
RGT D 118-10-5 Cinchonine, E 110-86-1 Pyridine
SOL 109-99-9 THF

STAGE(2)
RCT B 463304-60-1
SOL 109-99-9 THF

PRO C **463304-61-2**
NTE stereoselective

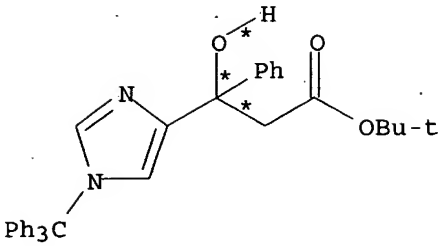
RX(4) OF 30 **A** + M ===> **N**



A

M

(4)



N
YIELD 99%

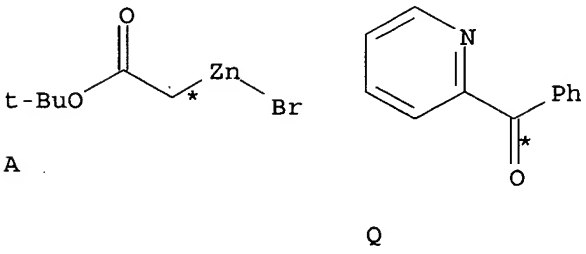
RX(4) RCT A **51656-70-3**

STAGE(1)
RGT D 118-10-5 Cinchonine, E 110-86-1 Pyridine
SOL 109-99-9 THF

STAGE(2)
RCT M 153684-64-1
SOL 109-99-9 THF

PRO N **463304-64-5**
NTE stereoselective

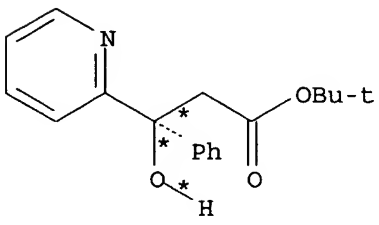
RX(6) OF 30 **A** + Q ===> **R**...



A

Q

(6)



R
YIELD 98%

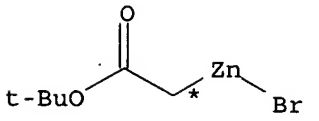
RX(6) RCT A **51656-70-3**

STAGE(1)
RGT D 118-10-5 Cinchonine, E 110-86-1 Pyridine
SOL 109-99-9 THF

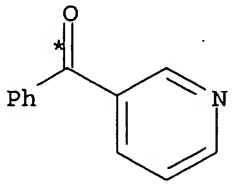
STAGE(2)
RCT Q 91-02-1
SOL 109-99-9 THF

PRO R **463304-66-7**
NTE stereoselective

RX(8) OF 30 **A** + **U** ===> **V**

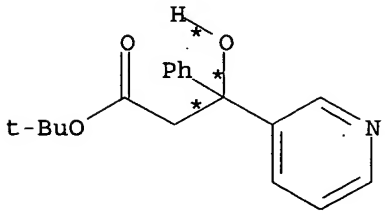


A



U

(8) →



V
YIELD 27%

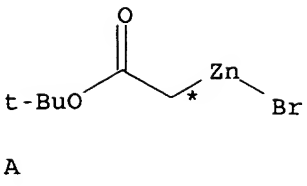
RX(8) RCT A **51656-70-3**

STAGE(1)
RGT D 118-10-5 Cinchonine, E 110-86-1 Pyridine
SOL 109-99-9 THF

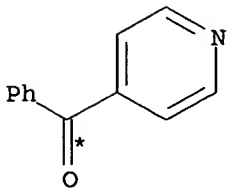
STAGE(2)
RCT U 5424-19-1
SOL 109-99-9 THF

PRO V **463304-67-8**
NTE stereoselective

RX(9) OF 30 **A** + **W** ===> **X**

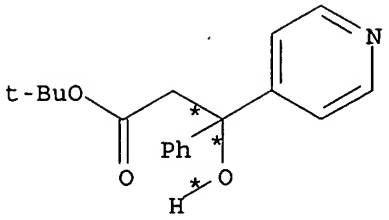


A



W

(9)



X
YIELD 41%

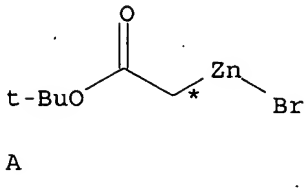
RX(9) RCT A **51656-70-3**

STAGE(1)
RGT D 118-10-5 Cinchonine, E 110-86-1 Pyridine
SOL 109-99-9 THF

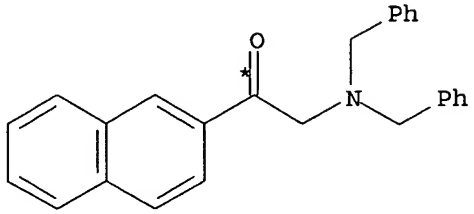
STAGE(2)
RCT W 14548-46-0
SOL 109-99-9 THF

PRO X **463304-68-9**
NTE stereoselective

RX(11) OF 30 **A** + AA ===> **AB**

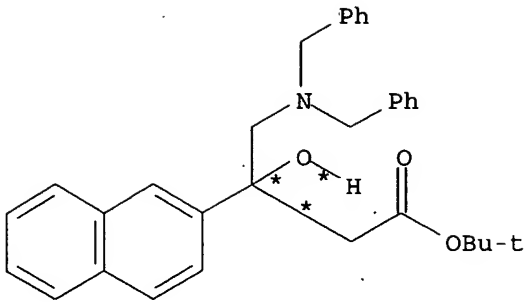


A



AA

(11)



AB
YIELD 99%

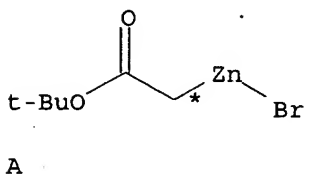
RX(11) RCT A **51656-70-3**

STAGE(1)
RGT D 118-10-5 Cinchonine, E 110-86-1 Pyridine
SOL 109-99-9 THF

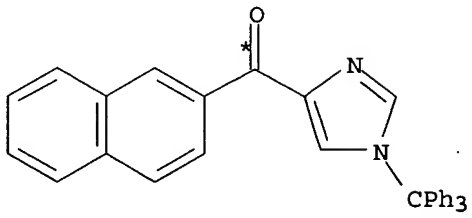
STAGE(2)
RCT AA 35363-22-5
SOL 109-99-9 THF

PRO AB **463304-70-3**

RX(14) OF 30 **A** + B ===> **C**

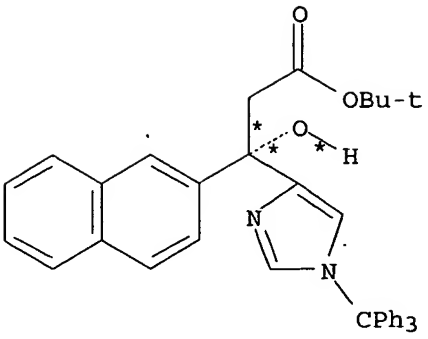


A



B

(14)



C
YIELD 98%

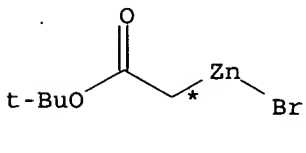
RX(14) RCT A **51656-70-3**

STAGE(1)
RGT AG 56-54-2 Quinidine, E 110-86-1 Pyridine
SOL 109-99-9 THF

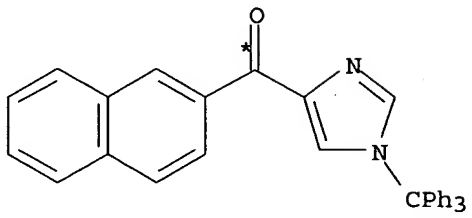
STAGE(2)
RCT B 463304-60-1
SOL 109-99-9 THF

PRO C **463304-61-2**
NTE stereoselective

RX(15) OF 30 **A** + B ===> **AH**

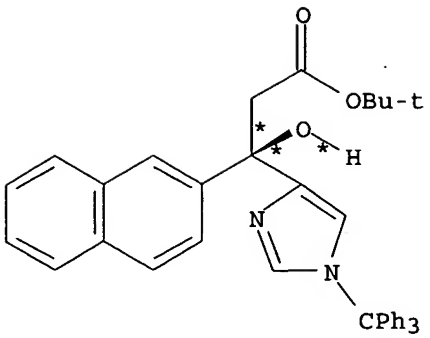


A



B

(15) ⟶



AH
YIELD 99%

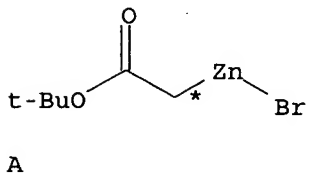
RX(15) RCT A **51656-70-3**

STAGE(1)
RGT AI 130-95-0 (-)-Quinine, E 110-86-1 Pyridine
SOL 109-99-9 THF

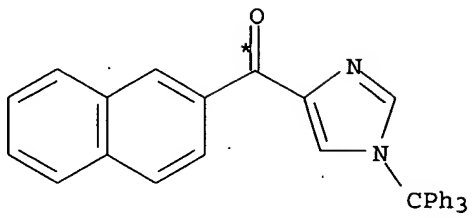
STAGE(2)
RCT B 463304-60-1
SOL 109-99-9 THF

PRO AH **805247-65-8**
NTE stereoselective

RX(22) OF 30 **A** + B ===> **AH**

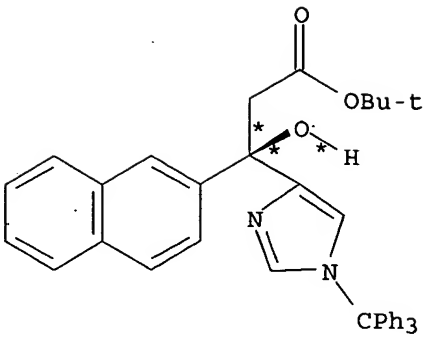


A



B

(22) ⟶



AH
YIELD 96%

RX(22) RCT A **51656-70-3**

STAGE(1)
RGT AP 485-71-2 Cinchonidine, E 110-86-1 Pyridine
SOL 109-99-9 THF

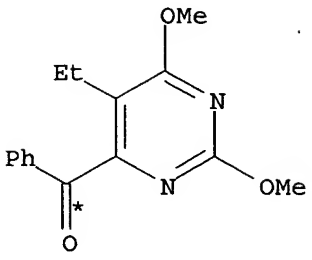
STAGE(2)
RCT B 463304-60-1
SOL 109-99-9 THF

PRO AH **805247-65-8**
NTE stereoselective

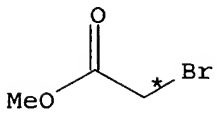
=> d ibib abs hit 2-4
YOU HAVE REQUESTED DATA FROM FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX' - CONTINUE? (Y)/N:y

L67 ANSWER 2 OF 24 [redacted] COPYRIGHT 2005 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 127:358834 CASREACT
TITLE: 5,6-Dihydropyrrolo[1,2-c]pyrimidine-1,3(2H,5H)-diones as annulated analogs of the anti-HIV compound MKC-442 [6-benzyl-1-(ethoxymethyl)-5-isopropyluracil]
AUTHOR(S): Danel, Krzysztof; Pedersen, Erik B.; Nielsen, Claus
CORPORATE SOURCE: Department Chemistry, Odense University, Odense, DK-5230, Den.
SOURCE: Synthesis (1997) (9), 1021-1026
CODEN: SYNTBF; ISSN: 0039-7881
PUBLISHER: Thieme
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Annulated analogs of the anti-HIV compound MKC-442 were synthesized from 6-benzoyl-5-ethyl-2,4-dimethoxypyrimidine (I) by reaction with Zn/NH4Cl and 3-bromopropene. The intermediate homoallylic alc. is subjected to a ring-closure reaction by treatment with Br2 either directly or after O-benzylation to give 5,6-dihydropyrrolo[1,2-c]pyrimidinones. No activity against HIV was observed, neither for the annulated analogs nor the derivs. synthesized from I. Only compound I showed activity against HIV-1.

RX(17) OF 114 ...K + AY ===> **X**...

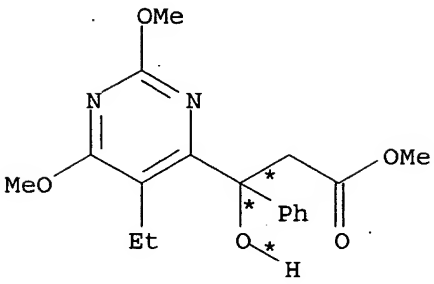


K



AY

(17)



X
YIELD 90%

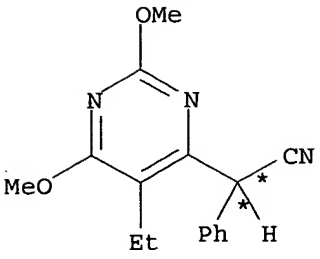
RX(17) RCT K 198555-41-8, AY 96-32-2

STAGE(1)
RGT O 12125-02-9 NH4Cl, P **7440-66-6** Zn

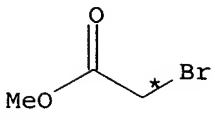
STAGE(2)
RGT J 7732-18-5 Water
SOL 60-29-7 Et2O

PRO X **198555-45-2**

RX(23) OF 114 COMPOSED OF RX(3), RX(17)
RX(23) F + AY ===> **X**

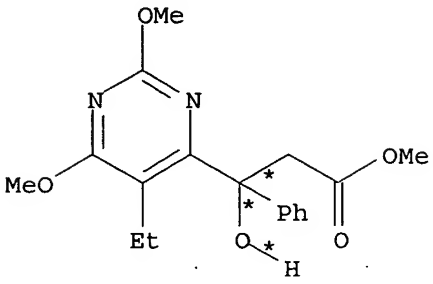


F



AY

2 STEPS



X
YIELD 90%

RX(3) RCT F 171048-64-9

STAGE(1)
RGT G 7646-69-7 NaH
SOL 68-12-2 DMF

STAGE(2)
RGT L 64-19-7 AcOH
SOL 7732-18-5 Water

PRO K 198555-41-8

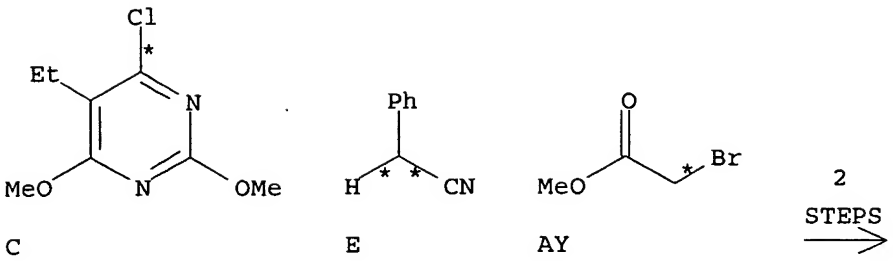
RX(17) RCT K 198555-41-8, AY 96-32-2

STAGE(1)
RGT O 12125-02-9 NH4Cl, P **7440-66-6** Zn

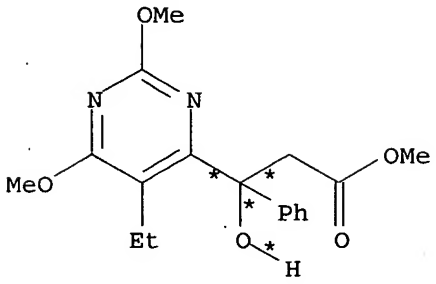
STAGE(2)
RGT J 7732-18-5 Water
SOL 60-29-7 Et2O

PRO X **198555-45-2**

RX(25) OF 114 COMPOSED OF RX(5), RX(17)
RX(25) C + E + AY ===> **X**



C E AY



X
YIELD 90%

RX(5) RCT C 120268-44-2, E 140-29-4

STAGE(1)
SOL 68-12-2 DMF

STAGE(2)
RGT G 7646-69-7 NaH

STAGE(3)
SOL 68-12-2 DMF

STAGE(4)
RGT G 7646-69-7 NaH

STAGE(5)
RGT R 7782-44-7 O2

STAGE(6)
RGT L 64-19-7 AcOH
SOL 7732-18-5 Water

PRO K 198555-41-8
NTE one-pot version

RX(17) RCT K 198555-41-8, AY 96-32-2

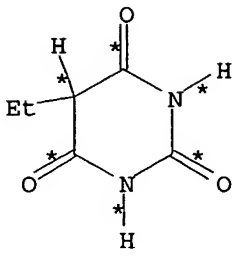
STAGE(1)
RGT O 12125-02-9 NH4Cl, P 7440-66-6 Zn

STAGE(2)

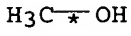
RGT J 7732-18-5 Water
SOL 60-29-7 Et2O

PRO X **198555-45-2**

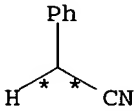
RX(40) OF 114 COMPOSED OF RX(1), RX(5), RX(17)
RX(40) A + 2 B + E + AY ===> **X**

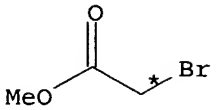


● Na



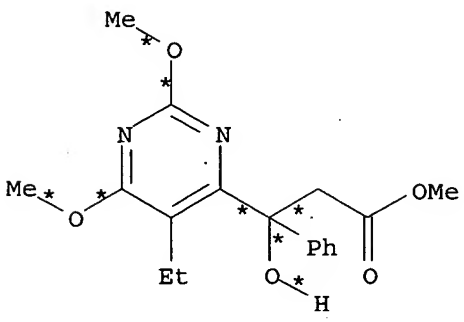
● Na





3 STEPS

A 2 B E AY



X
YIELD 90%

RX(1) RCT A 71720-62-2

STAGE(1)
RGT D 10025-87-3 POCl3

STAGE(2)
RCT B 124-41-4

PRO C 120268-44-2
NTE no exptl. detail

RX(5) RCT C 120268-44-2, E 140-29-4

STAGE(1)

SOL 68-12-2 DMF

STAGE(2)
RGT G 7646-69-7 NaH

STAGE(3)
SOL 68-12-2 DMF

STAGE(4)
RGT G 7646-69-7 NaH

STAGE(5)
RGT R 7782-44-7 O2

STAGE(6)
RGT L 64-19-7 AcOH
SOL 7732-18-5 Water

PRO K 198555-41-8
NTE one-pot version

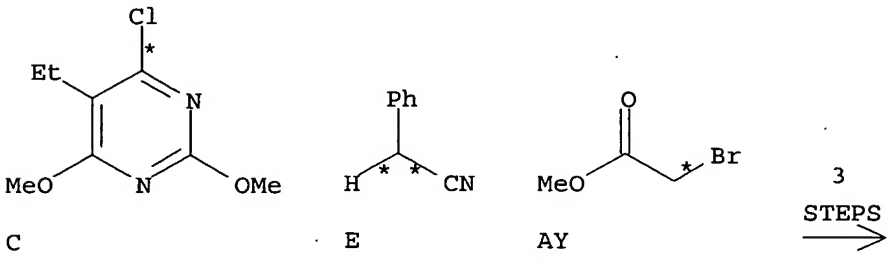
RX(17) RCT K 198555-41-8, AY 96-32-2

STAGE(1)
RGT O 12125-02-9 NH4Cl, P **7440-66-6** Zn

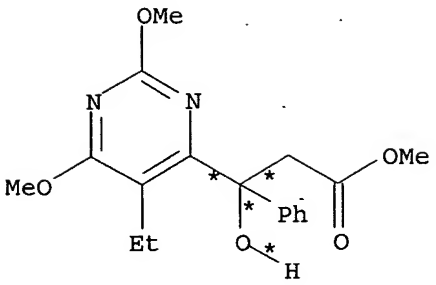
STAGE(2)
RGT J 7732-18-5 Water
SOL 60-29-7 Et2O

PRO X **198555-45-2**

RX(42) OF 114 COMPOSED OF RX(2), RX(3), RX(17)
RX(42) C + E + AY ===> **X**



C E AY



X
YIELD 90%

RX(2) RCT C 120268-44-2, E 140-29-4

STAGE(1)
SOL 68-12-2 DMF

STAGE(2)
RGT G 7646-69-7 NaH

STAGE(3)
RGT H 7647-01-0 HCl
SOL 7732-18-5 Water

PRO F 171048-64-9

RX(3) RCT F 171048-64-9

STAGE(1)
RGT G 7646-69-7 NaH
SOL 68-12-2 DMF

STAGE(2)
RGT L 64-19-7 AcOH
SOL 7732-18-5 Water

PRO K 198555-41-8

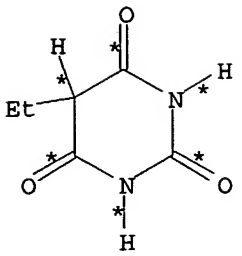
RX(17) RCT K 198555-41-8, AY 96-32-2

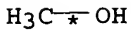
STAGE(1)
RGT O 12125-02-9 NH4Cl, P **7440-66-6** Zn

STAGE(2)
RGT J 7732-18-5 Water
SOL 60-29-7 Et2O

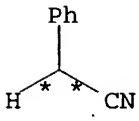
PRO X **198555-45-2**

RX(44) OF 114 COMPOSED OF RX(1), RX(2), RX(3), RX(17)
RX(44) A + 2 B + E + AY ===> **X**

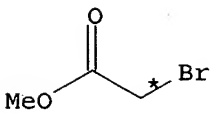




● Na

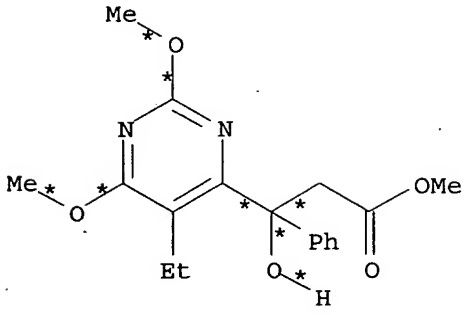


● Na



4
STEPS

A 2 B E AY



X
YIELD 90%

RX(1) RCT A 71720-62-2

STAGE(1)
RGT D 10025-87-3 POCl3

STAGE(2)
RCT B 124-41-4

PRO C 120268-44-2
NTE no exptl. detail

RX(2) RCT C 120268-44-2, E 140-29-4

STAGE(1)
SOL 68-12-2 DMF

STAGE(2)
RGT G 7646-69-7 NaH

STAGE(3)
RGT H 7647-01-0 HCl
SOL 7732-18-5 Water

PRO F 171048-64-9

RX(3) RCT F 171048-64-9

STAGE(1)
RGT G 7646-69-7 NaH
SOL 68-12-2 DMF

STAGE(2)
RGT L 64-19-7 AcOH
SOL 7732-18-5 Water

PRO K 198555-41-8

RX(17) RCT K 198555-41-8, AY 96-32-2

STAGE(1)
RGT O 12125-02-9 NH4Cl, P **7440-66-6** Zn

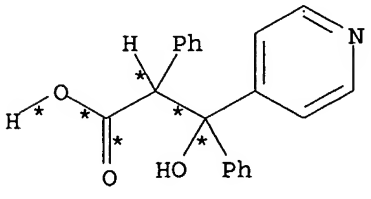
STAGE(2)
RGT J 7732-18-5 Water
SOL 60-29-7 Et2O

PRO X **198555-45-2**

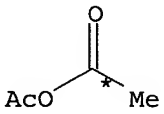
L67 ANSWER [redacted] COPYRIGHT 2005 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 85:5460 CASREACT
TITLE: Preparation and dehydration of pyridyl-substituted 3-hydroxy acids
AUTHOR(S): Mondeshka, D.; Ivanov, Ch.; Vasileva-Terzieva, E.
CORPORATE SOURCE: Higher Inst. Chem. Technol., Sofia, Bulg.
SOURCE: Izvestiya po Khimiya [redacted] 8(1), 33-43
CODEN: IZKHDX; ISSN: 0324-0401
DOCUMENT TYPE: Journal
LANGUAGE: Bulgarian

AB ClMgCHPhCO2Na (from dry PhCH2CO2Na and Me2CHMgCl) reacted with 4 RCOR1 (R = 2-, 3-, and 4-pyridyl; R1 = Me, Ph) to give the resp. HOCRR1CHPhCO2H (I) in 6.2-40.4% yield; I could not be dehydrated successfully with H2SO4 or polyphosphoric acid, but Ac2O-**ZnCl2** or -AlCl3 afforded mixts. containing small amts. of neutral products, e.g., ketones and lactones.

RX(1) OF 5 **A** + B ===> C

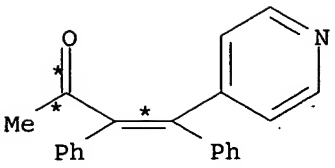


A



B

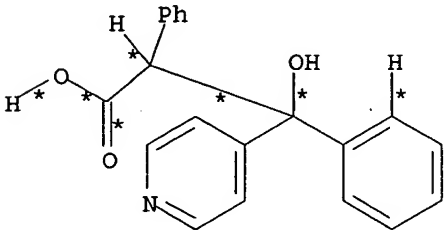
(1) ⟶



C
YIELD 8%

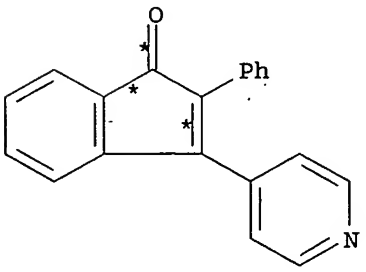
RX(1) RCT A **59403-73-5**, B 108-24-7
RGT D 7646-85-7 ZnCl2
PRO C 59403-68-8

RX(2) OF 5 **A** ===> E



A

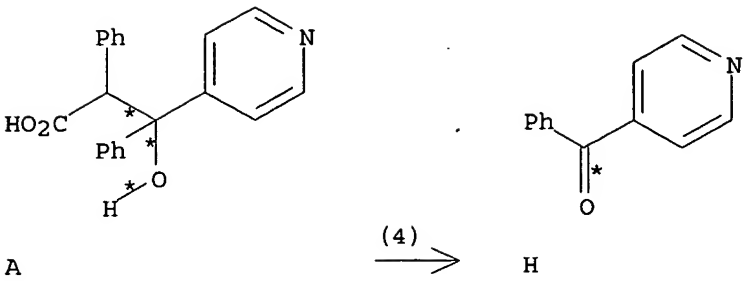
(2) ⟶



E

RX(2) RCT A **59403-73-5**
RGT D 7646-85-7 ZnCl2
PRO E 109979-99-9
CAT 108-24-7 Ac2O

RX(4) OF 5 **A** ===> H



A H

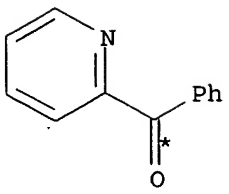
RX(4) RCT A **59403-73-5**
RGT D 7646-85-7 ZnCl2
PRO H 14548-46-0
CAT 108-24-7 Ac2O

AB ClMgCHPhCO2Na (from dry PhCH2CO2Na and Me2CHMgCl) reacted with 4 RCOR1 (R = 2-, 3-, and 4-pyridyl; R1 = Me, Ph) to give the resp. HOCRR1CHPhCO2H (I) in 6.2-40.4% yield; I could not be dehydrated successfully with H2SO4 or polyphosphoric acid, but Ac2O-**ZnCl2** or -AlCl3 afforded mixts. containing small amts. of neutral products, e.g., ketones and lactones.

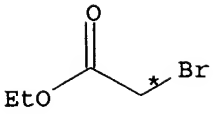
L67 [redacted]RIGHT 2005 ACS on STN DUPLICATE 6
ACCESSION NUMBER: 58:46614 CASREACT
TITLE: The chemistry of the benzylpyridines. V. β-Phenyl-β-pyridyl-β-hydroxypropionic acids and derivatives as antispasmodic agents
AUTHOR(S): Villani, Frank J.; King, Mary S.; Villani, Florence J.
CORPORATE SOURCE: Schering Corp., Bloomfield, NJ
SOURCE: Journal of Medicinal Chemistry [redacted], 142-4
CODEN: JMCMAR; ISSN: 0022-2623
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB cf. CA 49, 13991d. The Reformatskii reaction of ethyl bromoacetate and 2-, 3- and 4-benzoylpyridine yielded the expected Et β-phenyl-β-pyridyl-β-hydroxypropionates. Catalytic hydrogenation of the 2-pyridyl ester gave a mixture of 1-oxo-3-phenyl-3-hydroxyoctahydroindolizine and β-phenyl-β-(2-piperidyl)-β-hydroxypropionic acid. Hydrogenolysis of the tertiary hydroxyl group and reduction of the pyridine ring occurred on catalytic hydrogenation of Et β-phenyl-β-(3-pyridyl)-β-hydroxypropionate. Catalytic hydrogenation of the 4-pyridyl Reformatskii ester and subsequent methylation yielded the desired Et β-phenyl-β-(N-methyl-4-piperidyl)-β-hydroxypropionate(I). The compds. showed little biol. activity.

RX(2) OF 5 D + E ===> **F**...

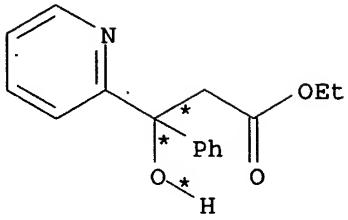


D



E

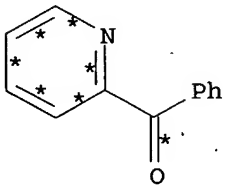
(2)



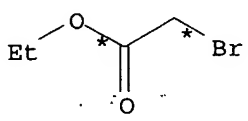
F
YIELD 55%

RX(2) RCT D 91-02-1, E 105-36-2
RGT G **7440-66-6** Zn
PRO F **6651-76-9**
SOL 108-88-3 PhMe, 71-43-2 Benzene
NTE Classification: Addition; C-Alkylation; # Conditions: Zn I2; benzene toluene; 1h; st bath 3h

RX(5) OF 5 COMPOSED OF RX(2), RX(3)
RX(5) 2 D + 2 E ===> **J** + K

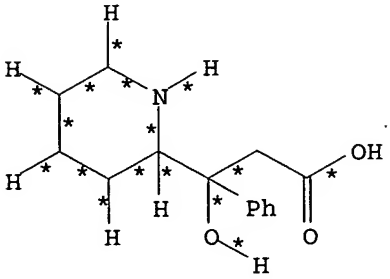


2 D

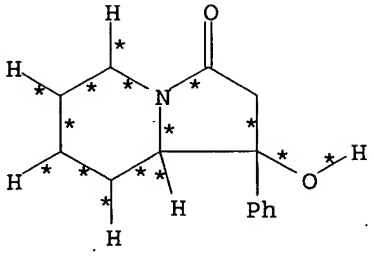


2 E

2
STEPS



J



K
YIELD 78%

RX(2) RCT D 91-02-1, E 105-36-2
RGT G **7440-66-6** Zn
PRO F 6651-76-9
SOL 108-88-3 PhMe, 71-43-2 Benzene
NTE Classification: Addition; C-Alkylation; # Conditions: Zn I2; benzene toluene; 1h; st bath 3h

RX(3) RCT F 6651-76-9
RGT L 1333-74-0 H2, M 7647-01-0 HCl
PRO J **95372-23-9**, K 92250-65-2
CAT 1314-15-4 PtO2
SOL 64-17-5 EtOH
NTE Classification: Hydrogenation; Ring formation; Hydrolysis; Heterocycle formation; # Conditions: H2/PtO2 EtOH; conc HCl; # Comments: minor product yield 16.5%

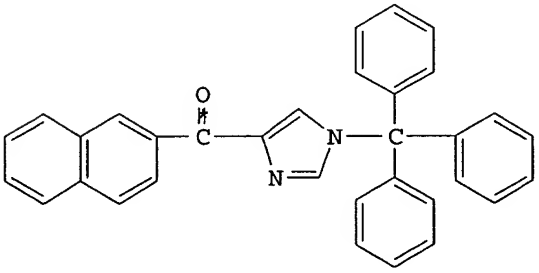
=> d bib rx 5
YOU HAVE REQUESTED DATA FROM FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX' - CONTINUE? (Y)/N:y

L67 [redacted] COPYRIGHT 2005 FIZ CHEMIE on STN
AN [redacted]
TI Highly Enantioselective Reformatsky Reaction of Ketones: Chelation-Assisted Enantioface Discrimination.
AU OJIDA, A.; YAMANO, T.; TAYA, N.; TASAKA, A.
CS Med. Chem. Lab., Takeda Chem. Ind., Ltd., Yodogawa, Osaka 532, Japan
SO Org. Lett., 4(18), 3051-3054 [redacted]
CODEN: ORLEF7 ISSN: 1523-[redacted]
LA English

RX(1) OF 10 A + B ===> C

$BrZn-*-CH_2C(O)OBu\text{-}t$

I



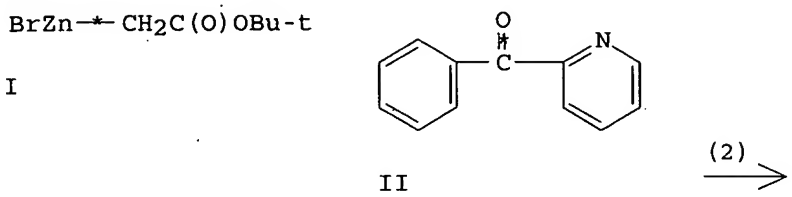
II

(1) →

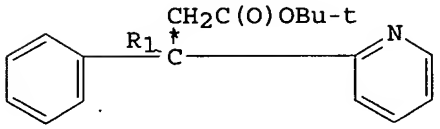
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *
RX(1) RCT I, **220485** (51656-70-3)
II, 921941
STAGE(1)
RGT 187 (110-86-1), Py
2081 (118-10-5;485-70-1;485-71-2;550-54-9;40134-63-2;72402-55-2;72402-56-3), CHIRAL, cinchonine
SOL 206 (109-99-9), THF
T 0.0 Cel
STAGE(2)
T -40.0 Cel

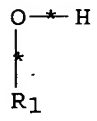
PRO III, **921942**, (S)-isomer
YDS 97.0 %
EEXP 1 97.0 %
KW addition; alkylation; C-alkylation
NTE reaction:I 2.(II) -> (S)-III, example: 1

RX(2) OF 10 A + G ===> H



I II





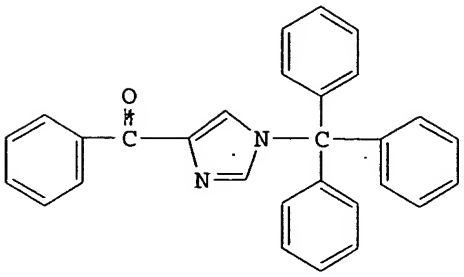
III
YIELD 98.0%

RX(2) RCT I, **220485** (51656-70-3)
II, 52211 (91-02-1)
STAGE(1)
RGT 187 (110-86-1), Py
2081 (118-10-5;485-70-1;485-71-2;550-54-9;40134-63-2;72402-55-2;72402-56-3), CHIRAL, cinchonine
SOL 206 (109-99-9), THF
T 0.0 Cel
STAGE(2)
T -40.0 Cel
PRO III, **921943**, (S)-isomer
YDS 98.0 %
EEXP 1 90.0 %
KW addition; alkylation; C-alkylation
NTE reaction:I 2.(II) -> (S)-III, example: 2

RX(3) OF 10 A + I ===> J

BrZn—* $CH_2C(O)OBu\text{-}t$

I



IV

(3) →

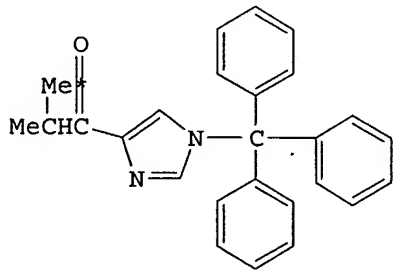
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

RX(3) RCT I, **220485** (51656-70-3)
IV, 316691 (153684-64-1)
STAGE(1)
RGT 187 (110-86-1), Py
2081 (118-10-5;485-70-1;485-71-2;550-54-9;40134-63-2;72402-55-2;72402-56-3), CHIRAL, cinchonine
SOL 206 (109-99-9), THF
T 0.0 Cel
STAGE(2)
T -40.0 Cel
PRO V, **921944**
YDS 99.0 %
EEXP 1 97.0 %
KW addition; alkylation; C-alkylation
NTE reaction:I 2.(IV) -> V, example: 1

RX(4) OF 10 A + K ===> L

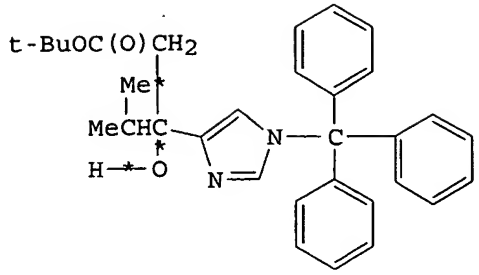
BrZn—* $CH_2C(O)OBu\text{-}t$

I



IV

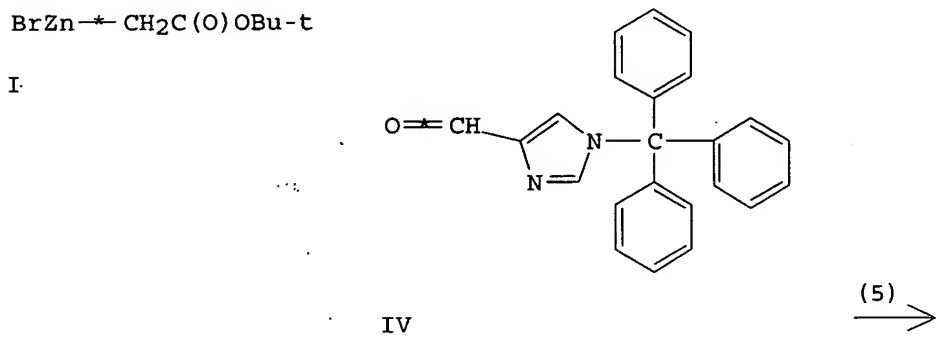
(4) →



V
YIELD 73.0%

RX(4) RCT I, 220485 (51656-70-3)
IV, 921945
STAGE(1)
RGT 187 (110-86-1), Py
2081 (118-10-5;485-70-1;485-71-2;550-54-9;40134-63-2;72402-55-2;72402-56-3), CHIRAL, cinchonine
SOL 206 (109-99-9), THF
T 0.0 Cel
STAGE(2)
T -40.0 Cel
PRO V, 921946
YDS 73.0 %
EEXP 1 94.0 %
KW addition; alkylation; C-alkylation
NTE reaction:I 2.(IV) -> V, example: 2

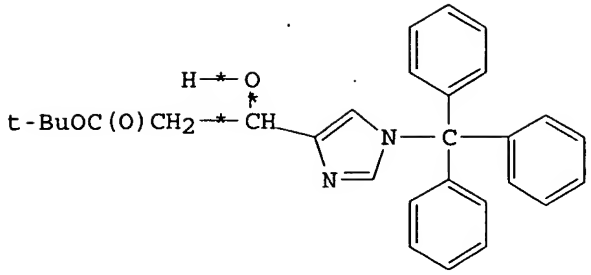
RX(5) OF 10 A + M ===> N



I

IV

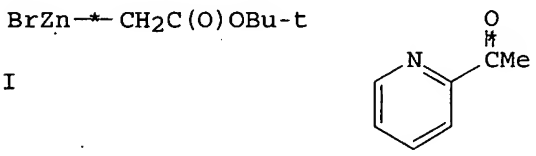
(5)



V
YIELD 84.0%

RX(5) RCT I, 220485 (51656-70-3)
IV, 62964 (33016-47-6)
STAGE(1)
RGT 187 (110-86-1), Py
2081 (118-10-5;485-70-1;485-71-2;550-54-9;40134-63-2;72402-55-2;72402-56-3), CHIRAL, cinchonine
SOL 206 (109-99-9), THF
T 0.0 Cel
STAGE(2)
T -40.0 Cel
PRO V, 921947
YDS 84.0 %
EEXP 1 66.0 %
KW addition; alkylation; C-alkylation
NTE reaction:I 2.(IV) -> V, example: 3

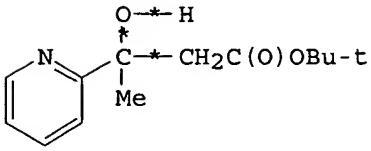
RX(6) OF 10 A + O ===> P



I

VI

(6) ⟶

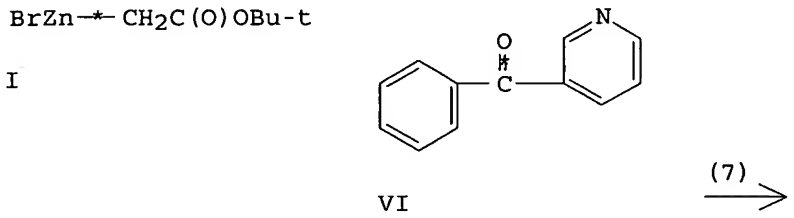


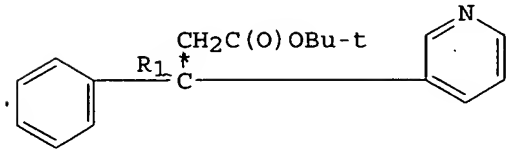
VII
YIELD 94.0%

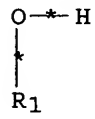
RX(6) RCT I, 220485 (51656-70-3)
VI, 18134 (1122-62-9)
STAGE(1)
RGT 187 (110-86-1), Py
2081 (118-10-5;485-70-1;485-71-2;550-54-9;40134-63-2;72402-

55-2;72402-56-3), CHIRAL, cinchonine
SOL 206 (109-99-9), THF
T 0.0 Cel
STAGE(2)
T -40.0 Cel
PRO VII, 921948
YDS 94.0 %
EEXP 1 86.0 %
KW addition; alkylation; C-alkylation
NTE reaction:I 2.(VI) -> VII, example: 1

RX(7) OF 10 A + Q ===> R



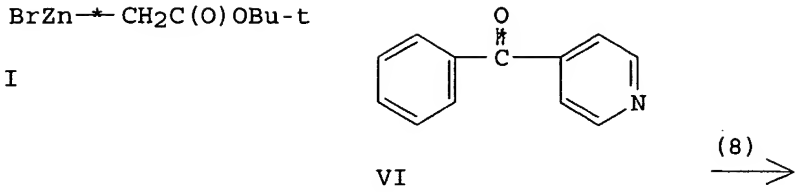




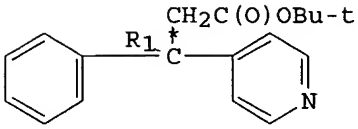
VII
YIELD 27.0%

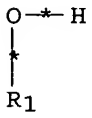
RX(7) RCT I, **220485** (51656-70-3)
VI, 37653 (5424-19-1)
STAGE(1)
RGT 187 (110-86-1), Py
2081 (118-10-5;485-70-1;485-71-2;550-54-9;40134-63-2;72402-55-2;72402-56-3), CHIRAL, cinchonine
SOL 206 (109-99-9), THF
T 0.0 Cel
STAGE(2)
T -40.0 Cel
PRO VII, **921949**
YDS 27.0 %
EEXP 1 28.0 %
KW addition; alkylation; C-alkylation
NTE reaction:I 2.(VI) -> VII, example: 2

RX(8) OF 10 A + S ===> T



I VI (8)

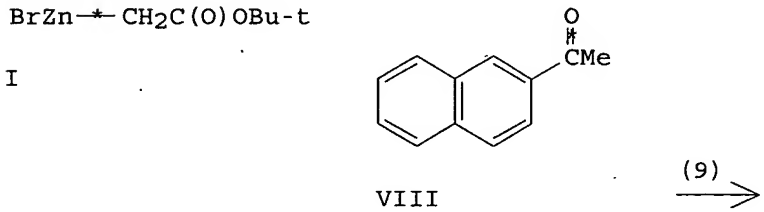




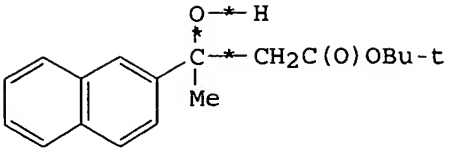
VII
YIELD 41.0%

RX(8) RCT I, **220485** (51656-70-3)
VI, 279969 (14548-46-0)
STAGE(1)
RGT 187 (110-86-1), Py
2081 (118-10-5;485-70-1;485-71-2;550-54-9;40134-63-2;72402-55-2;72402-56-3), CHIRAL, cinchonine
SOL 206 (109-99-9), THF
T 0.0 Cel
STAGE(2)
T -40.0 Cel
PRO VII, **921950**
YDS 41.0 %
EEXP 1 13.0 %
KW addition; alkylation; C-alkylation
NTE reaction:I 2.(VI) -> VII, example: 3

RX(9) OF 10 A + U ===> V



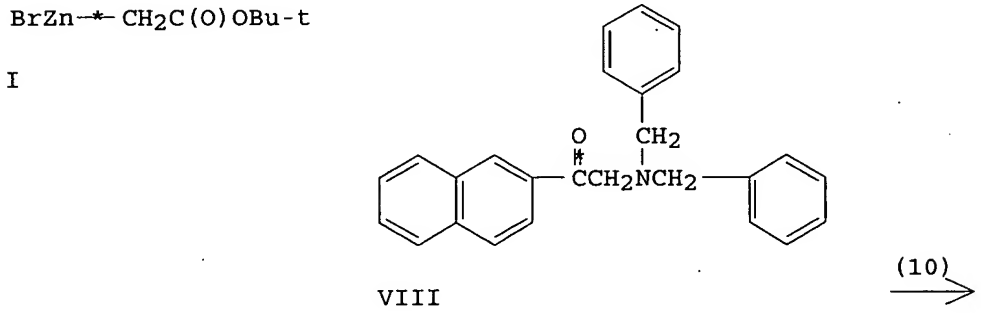
I VIII (9)



IX
YIELD 42.0%

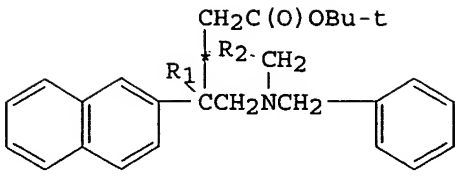
RX(9) RCT I, 220485 (51656-70-3)
VIII, 3003 (93-08-3)
STAGE(1)
RGT 187 (110-86-1), Py
2081 (118-10-5;485-70-1;485-71-2;550-54-9;40134-63-2;72402-55-2;72402-56-3), CHIRAL, cinchonine
SOL 206 (109-99-9), THF
T 0.0 Cel
STAGE(2)
T -40.0 Cel
PRO IX, 250538
YDS 42.0 %
EEXP 1 15.0 %
KW addition; alkylation; C-alkylation
NTE reaction:I 2.(VIII) -> IX, example: 1

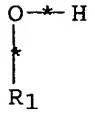
RX(10) OF 10 A + W ===> X

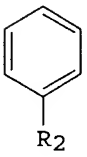


I

VIII







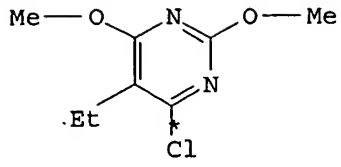
IX
YIELD 99.0%

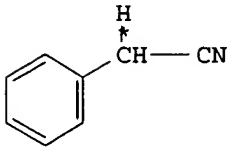
RX(10) RCT I, **220485** (51656-70-3)
VIII, 921951
STAGE(1)
RGT 187 (110-86-1), Py
2081 (118-10-5;485-70-1;485-71-2;550-54-9;40134-63-2;72402-55-2;72402-56-3), CHIRAL, cinchonine
SOL 206 (109-99-9), THF
T 0.0 Cel
STAGE(2)
T -40.0 Cel
PRO IX, **921952**
YDS 99.0 %
EEXP 1 0.0 %
KW addition; alkylation; C-alkylation
NTE reaction:I 2.(VIII) -> IX, example: 2

=> d bib rx 6-7
YOU HAVE REQUESTED DATA FROM FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX' - CONTINUE? (Y)/N:y

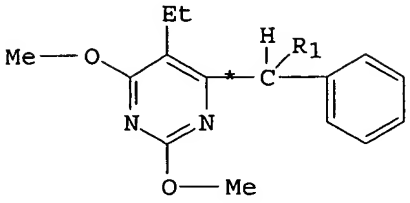
L67 A[redacted]COPYRIGHT 2005 FIZ CHEMIE on STN
AN 199802155 CHEMINFORMRX
TI 5,6-Dihydropyrrolo[1,2-c]pyrimidine-1,3(2H,5H)-diones as Annulated Analogues of the Anti-HIV Compound MKC-442 (6-Benzyl-1-(ethoxymethyl)-5-isopropyluracil).
AU DANEL, K.; PEDERSEN, E. B.; NIELSEN, C.
CS Dep. Chem., Odense Univ., DK-5230 Odense, Den.
SO Synthesis(9), 1021-1026 [redacted]
CODEN: SYNTBF ISSN: 0039-7881
LA English

RX(1) OF 17 A + B ===> C...





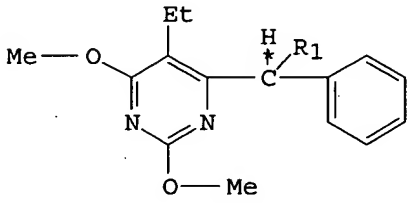
I II (1) ⟶



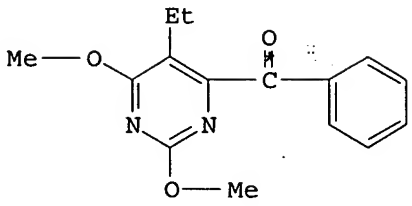
III
YIELD 43.0%

RX(1) RCT I, 573824
II, 787 (140-29-4)
RGT 1163 (7646-69-7), NaH
SOL 76 (68-12-2), DMF
PRO III, 573825
YDS 43.0 %
T 0.0 - 25.0 Cel
KW alkylation; C-alkylation; arylation
NTE reaction:I (II) -> III

RX(2) OF 17 ...C ===> F...



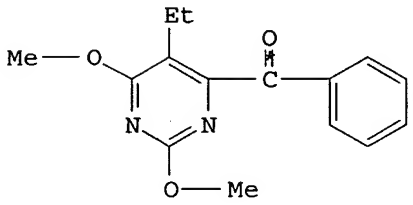
III (2) ⟶



IV
YIELD 70.0%

RX(2) RCT III, 573825
RGT 157 (7782-44-7), O2
1163 (7646-69-7), NaH
SOL 76 (68-12-2), DMF
PRO IV, 573826
YDS 70.0 %
T 25.0 Cel
TIM 72 hr
NTE reaction:III -> IV

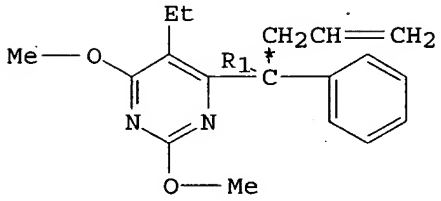
RX(3) OF 17 ...F + H ===> I...

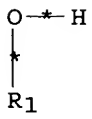


IV

V

(3) ⟶

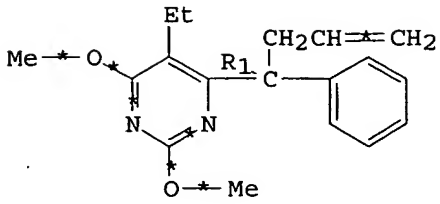


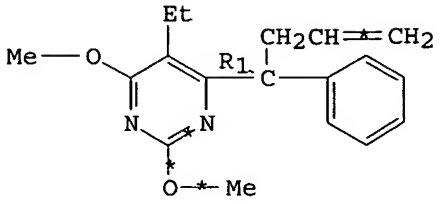


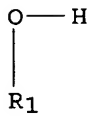
VI
YIELD 92.0%

RX(3) RCT IV, 573826
V, 1796 (106-95-6)
RGT 1301 (7440-66-6), Zn
425 (12125-02-9), NH4Cl
SOL 5102, neat
PRO VI, 573827
YDS 92.0 %
T 25.0 Cel
KW addition; alkylation; C-alkylation
NTE reaction:IV (V) -> VI

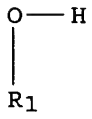
RX(4) OF 17 ...3 I ===> M + N + O





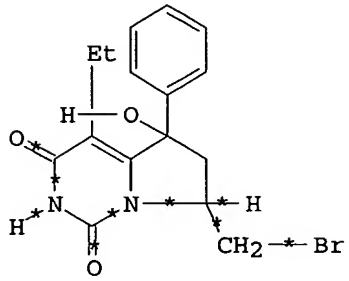


VI

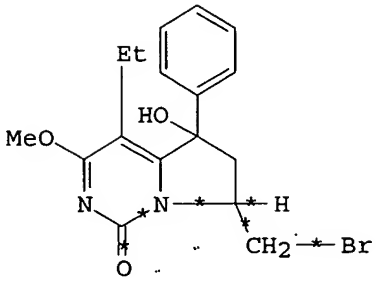


2 VI

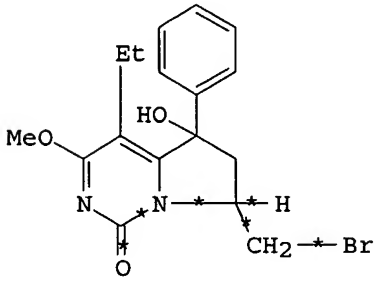
(4) ⟶



VII
YIELD 10.0%



VIII
YIELD 48.0%

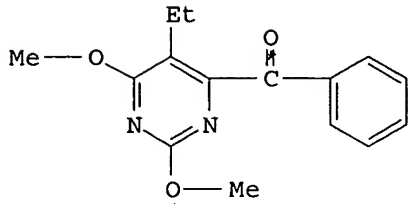


IX
YIELD 29.0%

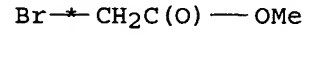
RX(4) RCT VI, 573827
RGT 18 (7726-95-6), Br2
SOL 31 (56-23-5), CCl4
PRO VII, 573828
VIII, 573829
IX, 573830
YDS 87.0 %

T 25.0 Cel
KW dearomatisation; halogenation; C-halogenation; bromination; alkylation; N-alkylation; addition
NTE reaction:VI -> VII + VIII + IX

RX(5) OF 17 ...F + R ===> S...

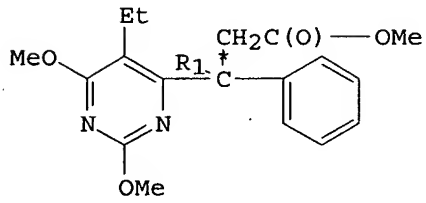


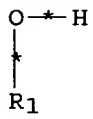
IV



X

(5) ⟶

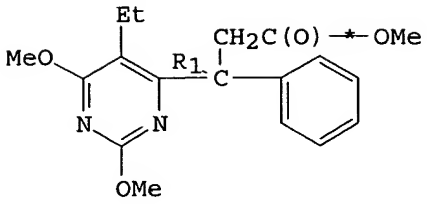


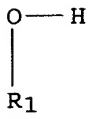


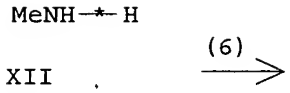
XI
YIELD 90.0%

RX(5) RCT IV, 573826
X, 17631 (96-32-2)
RGT **1301** (7440-66-6), Zn
425 (12125-02-9), NH4Cl
SOL 5102, neat
PRO XI, **573831**
YDS 90.0 %
T 25.0 Cel
KW addition; alkylation; C-alkylation
NTE reaction:IV (X) -> XI

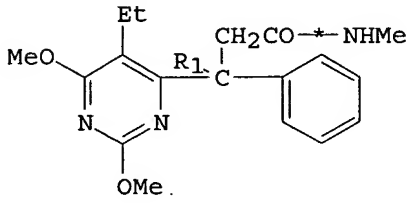
RX(6) OF 17 ...S + T ===> U

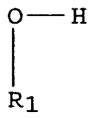






XI XII



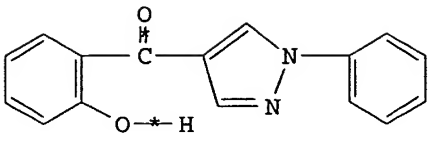


XIII
YIELD 100.0%

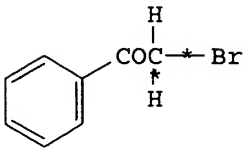
RX(6) RCT XI, 573831
XII, 128 (74-89-5)
SOL 81 (64-17-5), EtOH
PRO XIII, 573832
YDS 100.0 %
T 25.0 Cel
TIM 48 hr
KW acylation; N-acylation
NTE reaction:XI (XII) -> XIII

L67 [redacted] YRIGHT 2005 FIZ CHEMIE on STN
AN 199424075 CHEMINFORMRX
TI Synthesis of Heterocycles from 4-(2-Hydroxybenzoyl)-1-phenylpyrazole.
AU COUTINHO, D. L. M.; FERNANDES, P. S.
CS Dep. Chem., St. Xavier's Coll., Bombay 400 001, India
SO J. Indian Chem. Soc., 70(1), 51-52 [redacted]
CODEN: JICSAH ISSN: 0019-4522
LA English

RX(1) OF 10 A + B ===> C

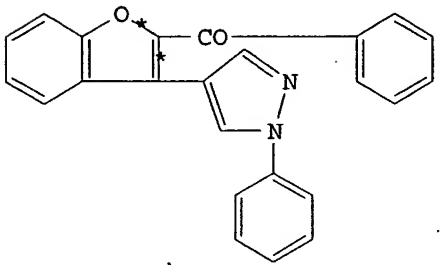


I



II

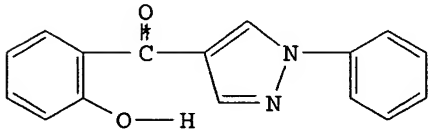
(1) →



III
YIELD 98.0%

RX(1) RCT I, 83814 (61466-44-2)
II, 9352 (70-11-1)
RGT 768 (584-08-7), K2CO3
SOL 5 (67-64-1), acetone
PRO III, 315057 (112030-41-8)
YDS 98.0 %
T.KW REFLUX
KW olefination; alkylation; O-alkylation; etherification
NTE reaction:I (II) -> III

RX(2) OF 10 A + F ===> G...



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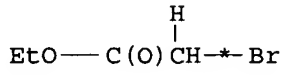
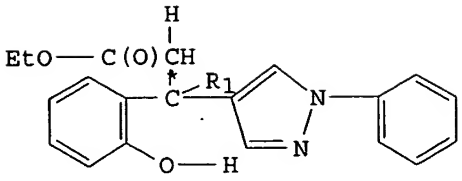
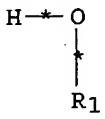


IV

(2) →

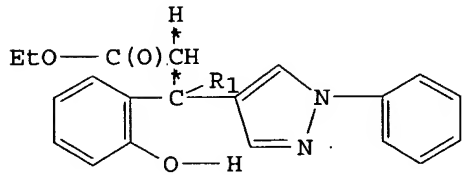


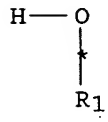


V

RX(2) RCT I, 83814 (61466-44-2)
IV, 8707 (105-36-2)
RGT [redacted]
PRO V, **315058**
T.KW REFLUX
KW addition; alkylation; C-alkylation
NTE reaction:I (IV) -> V

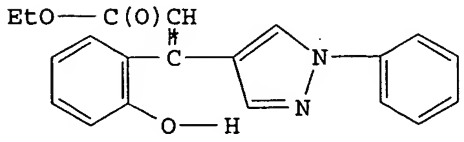
RX(3) OF 10 ...G ===> J...





V

(3)

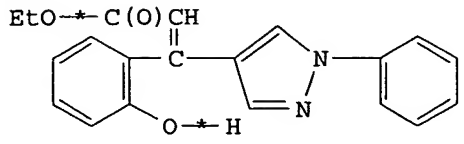


VI

RX(3) RCT V, 315058
RGT 210 (7719-09-7), SOCl2
187 (110-86-1), Py

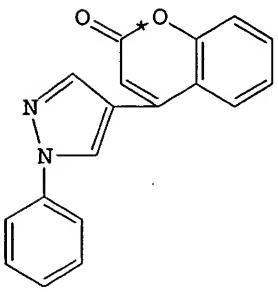
SOL 14 (71-43-2), benzene
PRO VI, 315059
T.KW REFLUX
KW olefination
NTE reaction:V -> VI

RX(4) OF 10 ...J ===> M



VI

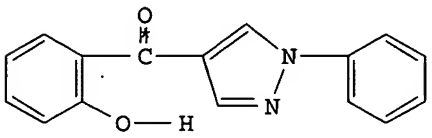
(4) →



VII

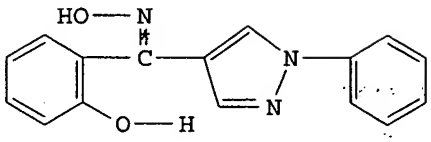
RX(4) RCT VI, 315059
CAT 198 (7664-93-9), H2SO4
PRO VII, 315060
KW acylation; O-acylation; esterification
NTE reaction:VI -> VII

RX(5) OF 10 A ===> O...



I

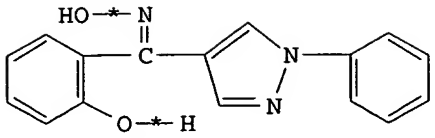
(5) →



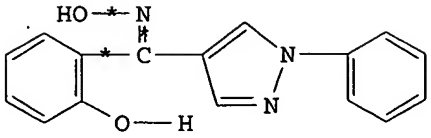
VIII
YIELD 90.0%

RX(5) RCT I, 83814 (61466-44-2)
RGT 1296 (5470-11-1), NH2OH.HCl
1160 (1310-58-3), KOH
SOL 222 (7732-18-5), H2O
PRO VIII, 315061
YDS 90.0 %
NTE reaction:I -> VIII

RX(6) OF 10 ...2 O ===> S + T

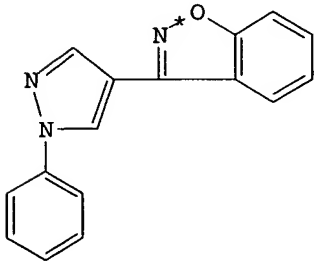


VIII

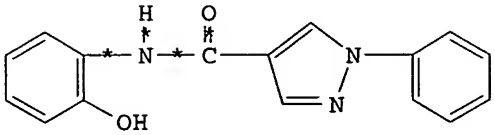


VIII

(6) →



IX
YIELD 40.0%



X
YIELD 50.0%

RX(6) RCT VIII, 315061
RGT 3 (64-19-7), AcOH
103 (7647-01-0), HCl
PRO IX, 315062
X, 315063
YDS 90.0 %
T.KW REFLUX
KW aromatisation; arylation
NTE reaction:VIII -> IX + X

=> d ibib ed ab 8
YOU HAVE REQUESTED DATA FROM FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX' - CONTINUE? (Y)/N:y

L67 [redacted] COPYRIGHT 2005 BEILSTEIN MDL on STN
ACCESSION NUMBER: **5850619** BABS
TITLE: Ethyl (tributylstannyl)acetate: A Versatile Rweagent for the Carboethoxymethylation of Functionalized Pyridines
AUTHOR(S): Dhar, T. G. Murall; Gluchowski, Charles
SOURCE: Tetrahedron Lett. [redacted] 35(7), 989-992
CODEN: TELEAY
DOCUMENT TYPE: Journal
LANGUAGE: English
SUMMARY LANGUAGE: English
ED 20041015
AB Ethyl (tributylstannyl)acetate adds chemoselectively to acylpyridinium salts to yield a variety of dihydropyridines with diverse functinal groups.These compounds are useful precursors for the preparation of a variety of N-heterocycles. the regiochemistry of the reaction is addressed

and the results are rationalized based on the HSAB principle.

=> d ibib ed ab hitstr hitind 9-18
YOU HAVE REQUESTED DATA FROM FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX' - CONTINUE? (Y)/N:y

L67 [redacted]S COPYRIGHT 2005 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2003:570964 HCAPLUS
DOCUMENT NUMBER: 139:133566
TITLE: Process for producing fused imidazole compound, **Reformatskii** reagent in stable form, and process for producing the same
INVENTOR(S): Kawakami, Jun-ichi; Nakamoto, Koji; Nuwa, Shigeru; Handa, Syoji; Miki, Shokyo
PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd., Japan
SOURCE: PCT Int. Appl., 141 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003059889	A1	20030724	WO 2003-JP300092	20030109
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2472821	AA	20030724	CA 2003-2472821	20030109
JP 2004161726	A2	20040610	JP 2003-3231	20030109
EP 1471056	A1	20041027	EP 2003-700504	20030109
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2005043544	A1	20050224	US 2004-500999	20041001
[redacted]				A 20020110
				A 20020925
				W 20030109

OTHER SOURCE(S): MARPAT 139:133566
ED Entered STN: 25 Jul 2003
AB Disclosed are a process for industrially advantageously producing a steroid C17,20-lyase inhibitor represented by the following general formula [I; Ra = H, a substituent; Ar = (un)substituted aromatic hydrocarbyl; Y1, Y2 = H, a substituent; the ring B = (un)substituted N-containing ring; n = an integer of 1-3] and a **Reformatskii** reagent in a stable form which is suitable for use in the production process. Either a specific β-hydroxy ester compound derivative (II; R = an ester residue; Ra, Ar, the ring B, Y1, Y2, n = same as above) obtained from a specific carbonyl compound by the **Reformatskii** reaction or a salt of the compound is reduced in the presence of a metal/hydrogen complex compound and a metal halide to an alc. (III; Ra, Ar, the ring B, Y1, Y2, n = same as above) and

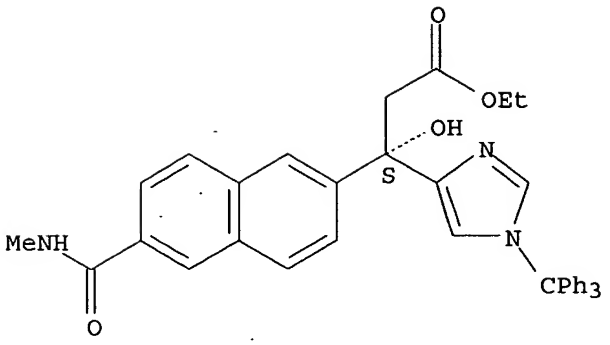
then subjected to ring closure to thereby obtain a compound represented by the general formula I. In the **Reformatskii** reaction, a stable solution of the compound represented by BrZnCH2CO2C2H5 or crystals of the compound represented by (BrZnCH2CO2Et.THF)2 are useful. Thus, 10 L THF and 253 mL chlorotrimethylsilane were successively added to 2,616 g **Zn** powder, stirred at 25° for 30 min, treated dropwise with a solution of 2,212mL Et bromoacetate in 25 l THF, and stirred at 31-35° for 30 min to give a **Reformatskii** reagent solution which was treated with 21.2 g (+)-cinchonine at 0-5° and then dropwise with 18.6 mL pyridine at 0-5° over 7 min, stirred at 0-5° for 20 min, treated dropwise with a solution of 30 g N-methyl-6-[(1-trityl-1H-imidazol-4-yl)carbonyl]-2-naphthamide in 300 mL THF over 30 min at -42° to -40°, and stirred at -45° to -40° for 1 h to give, after workup, 29.2 g Et (3S)-3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate (IV) (83% yield, 93.5% ee). THF (13 mL) and 0.645 g NaBH4 were successively added to 1.3 g IV and the resulting mixture was treated with 0.95 g CaCl2 at 2° and then dropwise with 13 mL ethanol over 15 min at 2°, stirred at 3-4° for 30 min and at 40-43° for 4 h to give, after workup, 1.08 g 6-[(1S)-1,3-dihydroxy-1-(1-trityl-1H-imidazol-4-yl)propyl]-N-methyl-2-naphthamide (V) (89% yield, 92.0% ee). THF (7 mL) and 0.42 mL diisopropylethylamine were successively added to 0.35 g V and the resulting mixture was treated dropwise with 0.07 mL methanesulfonyl chloride at 0-5°, stirred at 0-5° for 40 min, treated with 1.8 mL MeOH and 3.5ml MeCN, and stirred at 60-65° for 4 h to give, after workup, 0.87 g 6-[(7S)-7-hydroxy-6,7-dihydro-5H-pyrrolo[1,2-c]imidazol-7-yl]-N-methyl-2-naphthamide (VI) (62%, 98.2% ee).

IT **566200-78-0P**, Ethyl (3S)-3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate **566200-80-4P**, Isopropyl (3S)-3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate **566200-92-8P** **566200-93-9P** **566200-97-3P**, Ethyl 3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate **566200-98-4P**, tert-Butyl (3S)-3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

RN 566200-78-0 HCAPLUS

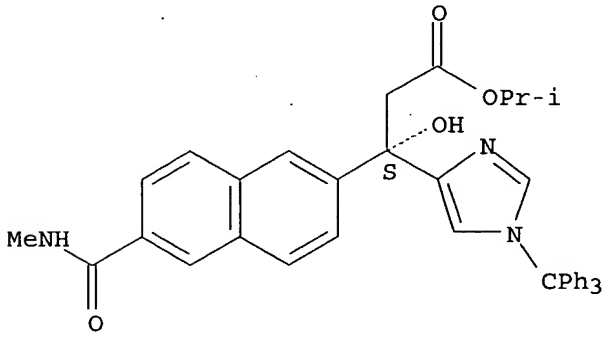
CN 1H-Imidazole-4-propanoic acid, β-hydroxy-β-[6-[(methylamino)carbonyl]-2-naphthalenyl]-1-(triphenylmethyl)-, ethyl ester, (βS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



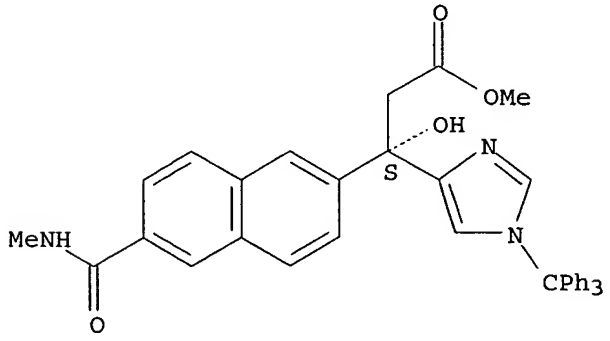
RN 566200-80-4 HCAPLUS
CN 1H-Imidazole-4-propanoic acid, β-hydroxy-β-[6-[(methylamino)carbonyl]-2-naphthalenyl]-1-(triphenylmethyl)-, 1-methylethyl ester, (βS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 566200-92-8 HCAPLUS
CN 1H-Imidazole-4-propanoic acid, β-hydroxy-β-[6-[(methylamino)carbonyl]-2-naphthalenyl]-1-(triphenylmethyl)-, methyl ester, (βS)- (9CI) (CA INDEX NAME)

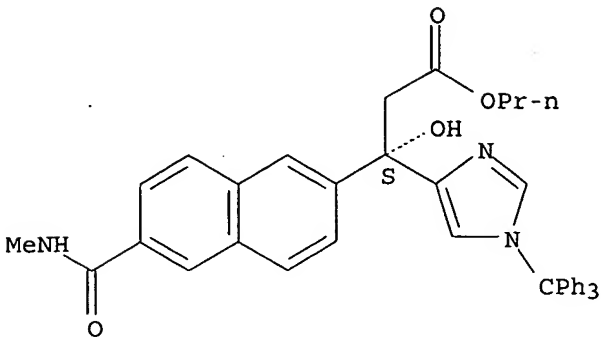
Absolute stereochemistry.



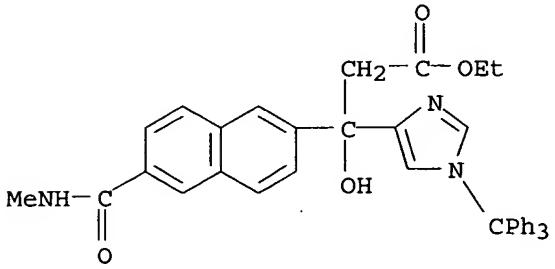
RN 566200-93-9 HCAPLUS
CN 1H-Imidazole-4-propanoic acid, β-hydroxy-β-[6-[(methylamino)carbonyl]-2-naphthalenyl]-1-(triphenylmethyl)-, propyl

ester, (βS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

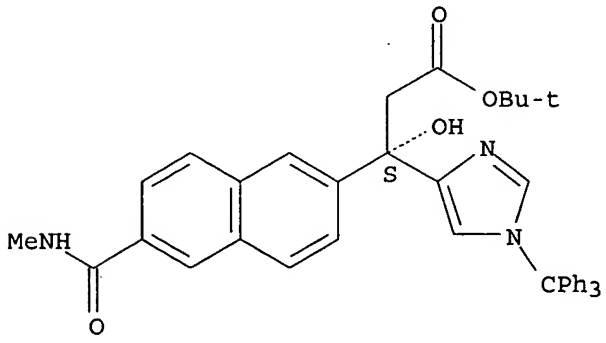


RN 566200-97-3 HCAPLUS
CN 1H-Imidazole-4-propanoic acid, β-hydroxy-β-[6-[(methylamino)carbonyl]-2-naphthalenyl]-1-(triphenylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



RN 566200-98-4 HCAPLUS
CN 1H-Imidazole-4-propanoic acid, β-hydroxy-β-[6-[(methylamino)carbonyl]-2-naphthalenyl]-1-(triphenylmethyl)-, 1,1-dimethylethyl ester, (βS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

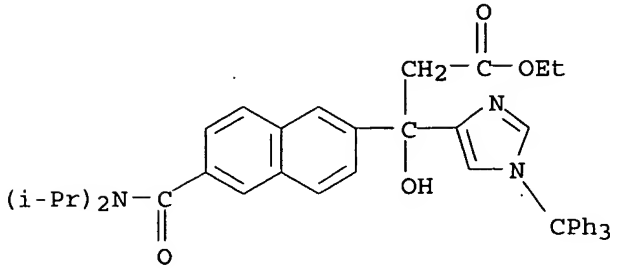


IT **426219-55-8P**
RL: **SPN (Synthetic preparation); PREP (Preparation)**
(preparation of fused imidazole compound steroid lyase inhibitor by

Reformatskii reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

RN 426219-55-8 HCAPLUS

CN 1H-Imidazole-4-propanoic acid, β-[6-[[bis(1-methylethyl)amino]carbonyl]-2-naphthalenyl]-β-hydroxy-1-(triphenylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



IC ICM C07D233-64
ICS C07D497-04

CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1, 7

ST fused imidazole prepn steroid C1720 lyase inhibitor; **ethoxycarbonylmethylzinc** bromide THF complex prepn **Reformatskii** reagent stable; carbonyl compd **Reformatskii** reaction; pyrroloimidazolylnaphthamide prepn steroid C1720 lyase inhibit

IT Molecular sieves
(**Reformatskii** reaction activator; preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT Esters, preparation
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(hydroxy; preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT Asymmetric synthesis and induction
Cyclization
Reformatskii reaction
(preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT Halides
RL: RGT (Reagent); RACT (Reactant or reagent)
(preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT Carbonyl compounds (organic), reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of stable **ethoxycarbonylmethylzinc** bromide-THF complex or alkoxycarbonylmethyl **zinc** bromide solution for **Reformatskii** reaction of carbonyl compds.)

IT Reduction

(sodium borohydride and metal halides; preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT **Reformatskii** reaction catalysts
(stereoselective, cinchonine; preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT 7782-50-5, Chlorine, reactions 7789-45-9, Copper(II) bromide 13767-71-0, Copper(II) iodide
RL: RCT (Reactant); RACT (Reactant or reagent)
(**Reformatskii** reaction activator; preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT 75-77-4, Chlorotrimethylsilane, reactions 106-93-4, 1,2-Dibromoethane 107-06-2, 1,2-Dichloroethane, reactions 624-73-7, 1,2-Diiodoethane 7447-39-4, Copper(II) chloride, reactions 7726-95-6, Bromine, reactions 7783-90-6, Silver chloride, reactions 7783-96-2, Silver iodide 7785-23-1, Silver bromide 20461-54-5, Iodide, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(**Reformatskii** reaction activator; preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT 96-47-9, 2-Methyltetrahydrofuran 109-99-9, Tetrahydrofuran, reactions 110-71-4, 1,2-Dimethoxyethane 5614-37-9, Cyclopentyl methyl ether
RL: RCT (Reactant); RACT (Reactant or reagent)
(**Reformatskii** reaction solvent; preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT 53429-22-4P, **Methoxycarbonylmethylzinc** bromide 53429-23-5P, **Isopropoxycarbonylmethylzinc** bromide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(THF solution; preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT 51656-70-3P, tert-**Butoxycarbonylmethylzinc** bromide 109756-09-4P 566200-94-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(THF solution; preparation of stable **ethoxycarbonylmethylzinc** bromide-THF complex or alkoxycarbonylmethyl **zinc** bromide solution for **Reformatskii** reaction of carbonyl compds.)

IT 5764-82-9P, **Ethoxycarbonylmethylzinc** bromide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(organic solvent solution; preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT 9044-50-2

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT 118-10-5, (+)-Cinchonine 485-65-4, Hydrocinchonine
RL: CAT (Catalyst use); USES (Uses)
(preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT 426219-18-3P, 6-[7-Hydroxy-6,7-dihydro-5H-pyrrolo[1,2-c]imidazol-7-yl]-N-methyl-2-naphthalenecarboxamide 566939-85-3P, 6-[(7S)-7-Hydroxy-6,7-dihydro-5H-pyrrolo[1,2-c]imidazol-7-yl]-N-methyl-2-naphthalenecarboxamide
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT 566935-35-1P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT 74-89-5, Methylamine, reactions 96-32-2, Methyl bromoacetate 105-36-2, Ethyl bromoacetate 141-78-6, Ethyl acetate, reactions 5292-43-3, tert-Butyl bromoacetate 5773-80-8, 6-Bromo-2-naphthoic acid 7440-66-6, **Zinc**, reactions 10043-52-4, Calcium chloride, reactions 16940-66-2, Sodium borohydride 29921-57-1, Isopropyl bromoacetate 33016-47-6, 1-Trityl-4-formyl-1H-imidazole 35223-80-4, Propyl bromoacetate 426219-47-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT 337521-39-8P, N-Methyl-6-[(1-trityl-1H-imidazol-4-yl)carbonyl]-2-naphthalenecarboxamide 426219-35-4P, 6-Bromo-N-methyl-2-naphthalenecarboxamide 566200-77-9P, 6-[1,3-Dihydroxy-1-(1-trityl-1H-imidazol-4-yl)propyl]-N-methyl-2-naphthalenecarboxamide **566200-78-0P**, Ethyl (3S)-3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate 566200-79-1P, 6-[(1S)-1,3-Dihydroxy-1-(1-trityl-1H-imidazol-4-yl)propyl]-N-methyl-2-naphthalenecarboxamide **566200-80-4P**, Isopropyl (3S)-3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate **566200-92-8P 566200-93-9P** 566200-96-2P, 6-[Hydroxy(1-trityl-1H-imidazol-4-yl)methyl]-N-methyl-2-naphthalenecarboxamide **566200-97-3P**, Ethyl 3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate **566200-98-4P**, tert-Butyl (3S)-3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable

alkoxycarbonylmethylzinc bromide, reduction of β-hydroxy esters, and cyclization)

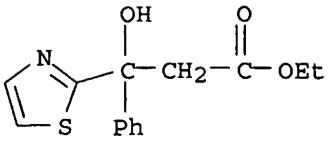
IT **426219-55-8P** 426219-56-9P, 6-[1,3-Dihydroxy-1-(1-trityl-1H-imidazol-4-yl)propyl]-N,N-diisopropyl-2-naphthalenecarboxamide
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**
(preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)

IT 98-01-1, 2-Furfural, reactions 98-86-2, Acetophenone, reactions 100-47-0, Benzonitrile, reactions 100-52-7, Benzaldehyde, reactions 104-85-8, p-Tolunitrile 106-51-4, p-Benzoquinone, reactions 108-94-1, Cyclohexanone, reactions 118-75-2, 2,3,5,6-Tetrachloro-1,4-benzoquinone, reactions 120-92-3, Cyclopentanone 135-02-4, o-Methoxybenzaldehyde 137-18-8, 2,5-Dimethyl-p-benzoquinone 394-47-8, 2-Fluorobenzonitrile 434-45-7 495-41-0, Phenyl 1-propenyl ketone 527-17-3, 2,3,5,6-Tetramethyl-1,4-benzoquinone 527-61-7, 2,6-Dimethyl-p-benzoquinone 579-74-8, o-Methoxyacetophenone 614-47-1, (E)-Chalcone 615-93-0, 2,5-Dichloro-p-benzoquinone 619-72-7, p-Nitrobenzonitrile 697-91-6, 2,6-Dichloro-p-benzoquinone 930-68-7, 2-Cyclohexen-1-one 1121-60-4, 2-Pyridinecarboxaldehyde 1194-02-1, 4-Fluorobenzonitrile 1896-62-4, trans-4-Phenyl-3-buten-2-one 4985-92-6, 5-Methyl-2-pyridinecarboxaldehyde 5061-21-2, 2-Bromo-γ-butyrolactone 5470-96-2, 2-Quinolinecarboxaldehyde 15121-89-8 18402-83-0, trans-3-Nonen-2-one 25550-23-6, Anisonitrile 55284-67-8, (-)-Menthyl bromoacetate 135546-15-5, 3,5-Di-tert-butyl-2-methoxybenzaldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of stable **ethoxycarbonylmethylzinc** bromide-THF complex or alkoxycarbonylmethyl **zinc** bromide solution for **Reformatskii** reaction of carbonyl compds.)

IT 94-02-0P, Ethyl 3-oxo-3-phenylpropanoate 838-57-3P, Ethyl 3-(4-nitrophenyl)-3-oxopropanoate 1479-24-9P, Ethyl 3-(2-fluorophenyl)-3-oxopropanoate 1999-00-4P, Ethyl 3-(4-fluorophenyl)-3-oxopropanoate 2293-60-9P, Ethyl 3-hydroxy-3-phenylbutanoate 2881-83-6P, Ethyl 3-(4-methoxyphenyl)-3-oxopropanoate 3197-76-0P, Ethyl (1-hydroxycyclopentyl)acetate 5326-50-1P, Ethyl (1-hydroxycyclohexyl)acetate 5764-85-2P, Ethyl 3-hydroxy-3-phenylpropanoate 22406-80-0P, Ethyl (1-hydroxycyclohex-2-en-1-yl)acetate 25408-95-1P, Ethyl 3-(2-furyl)-3-hydroxypropanoate 27835-00-3P, Ethyl 3-(4-methylphenyl)-3-oxopropanoate 60263-06-1P, Ethyl (1-hydroxy-4-oxocyclohexa-2,5-dien-1-yl)acetate 70200-18-9P 91012-91-8P 92961-50-7P 113426-31-6P 133571-96-7P 153816-93-4P 328396-06-1P, Ethyl (4E)-3-hydroxy-3,5-diphenylpent-4-enoate 401900-38-7P, Ethyl (3,5-dichloro-1-hydroxy-4-oxocyclohexa-2,5-dien-1-yl)acetate 426219-40-1P, Ethyl 3-hydroxy-3-(1-trityl-1H-imidazol-4-yl)propanoate 463304-71-4P 501079-81-8P, Ethyl (1-hydroxy-3,5-dimethyl-4-oxocyclohexa-2,5-dien-1-yl)acetate 548458-42-0P, Ethyl (4E)-3-hydroxy-3-methyl-5-phenylpent-4-enoate 566200-81-5P, Ethyl 3-hydroxy-3-phenylhex-4-enoate 566200-82-6P, Diethyl (2E)-4-hydroxy-4-phenylhex-2-enedioate 566200-83-7P, Ethyl (4E)-3-hydroxy-3-pentylhex-4-enoate 566200-84-8P, Ethyl (1-hydroxy-2,5-dimethyl-4-oxocyclohexa-2,5-dien-1-yl)acetate 566200-85-9P, Ethyl (2,5-dichloro-1-hydroxy-4-oxocyclohexa-2,5-dien-1-yl)acetate 566200-86-0P, Ethyl (1-hydroxy-2,3,5,6-tetramethyl-4-oxocyclohexa-2,5-dien-1-yl)acetate 566200-87-1P 566200-88-2P 566200-89-3P, Ethyl 3-hydroxy-3-(5-methyl-1-trityl-1H-imidazol-4-yl)propanoate 566200-90-6P 566200-91-7P 566200-95-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of stable **ethoxycarbonylmethylzinc** bromide-THF complex or alkoxycarbonylmethyl **zinc** bromide solution for

Reformatskii reaction of carbonyl compds.)
IT 64-17-5, Ethanol, reactions 67-56-1, Methanol, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(solvent; preparation of fused imidazole compound steroid lyase inhibitor by **Reformatskii** reaction using stable **alkoxycarbonylmethylzinc** bromide, reduction of β-hydroxy esters, and cyclization)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 A[redacted]S COPYRIGHT 2005 ACS on STN DUPLICATE 5
ACCESSION NUMBER: 1970:476963 HCAPLUS
DOCUMENT NUMBER: 73:76963
TITLE: Hypoglycemics. II. Hypoglycemic activity of β,β-disubstituted β-hydroxypropanohydrazide derivatives
AUTHOR(S): Kurihara, Tozaburo; Takeda, Hideo; Ito, Hideo; Sagawa, Keiko
CORPORATE SOURCE: Japan
SOURCE: Annual Report of the Tohoku College of Pharmacy [redacted]No. 16, 39-51
CODEN: TYKNAQ; ISSN: 0495-7342
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
ED Entered STN: 12 May 1984
AB Throughout this abstract, Q = 2-thienyl. **Reformatskii** reaction gave 40-6% R1R2C(OH)CH2CO2Et (R1, R2 and m.p. given): Ph, Q, 52-3°; Q, Q, 48°; and Ph, 2-thiazolyl, 95°. The following R1R2C(OH)CH2CONHNH2 were prepared in 60-83% yields by stirring the ester with 80% N2H4.H2O, in C5H5N, 4 hr with cooling (same data given): Ph, Q (I), 139-40°; Ph, 2-thiazolyl, 167°; Et, Q, 112°; 2-thiazolyl, Q, 169-70°; and Q, Q, 111-13°. I was converted into QPhC(OH)CH2CONHN:CHR (R and m.p. given): Et, 171°; Ph 215°; furyl, 184°; and Q, 189°. The following R1PhC(OH)CH2CONHNHR (R1 = Q unless otherwise noted) were prepared by N-alkylation and acylation of the hydrazides or hydrogenation (R and m.p. given): Et (II), 167°; iso-Pr, 116° (HCl salt); Bu, 114° (HCl salt); Bu (R1 = 2-thiazolyl), 165°; pentyl, 170°; QCH2, 184°; furfuryl, 161°; PhCH2, 169-70°; Ac, 187°; Bz, 233°; p-MeC6H4SO2, 163°; and CH2SO3Na, 167° (prepared by refluxing the hydrazide, 12 hr, with aqueous HOCH2SO3Na). Similarly prepared were R1PhC:CHCONHNHR.HCl (R1, R, and m.p. given): Ph, H, 169°; Q, H (III), 181°; and Q, Bu, 89-90°. PhMgBr and QCOCO2Et gave 73% QPhC(OH)CO2Et, b3 142-4°, converted into QPhC(OH)CONHNH2, m. 128-30°. Also prepared was QPhCHCH2CONHNH2.HCl, m. 160°. Hypoglycemic activity was tested with oral doses of 100 mg/kg to fasting rabbits. The hydrazides, e.g. I, were fairly active and the activity was enhanced by N-alkylation or conversion to hydrazones. Acryloylhydrazides, e.g. III, also had high activity, which was lowered by saturation of the double bond. II and III were most active, but had somewhat high toxicity in mice.
IT **23997-15-1P**
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**
(preparation of)
RN 23997-15-1 HCAPLUS
CN 2-Thiazolehydracrylic acid, β-phenyl-, ethyl ester (8CI) (CA INDEX NAME)



CC 27 (Heterocyclic Compounds (One Hetero Atom))
IT 23997-11-7P 23997-13-9P **23997-15-1P** 28569-78-0P
29101-06-2P 29101-07-3P 29101-08-4P 29101-09-5P 29101-10-8P
29101-11-9P 29101-12-0P 29101-13-1P 29101-14-2P 29101-15-3P
29101-16-4P 29101-17-5P 29101-18-6P 29101-19-7P 29101-20-0P
29101-21-1P 29101-23-3P 29122-81-4P 29122-82-5P 29122-83-6P
29122-84-7P 29122-85-8P 29122-86-9P 29260-73-9P 29625-32-9P
29625-33-0P
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**
(preparation of)

L67 ANSWER 11 OF [redacted] COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:719450 HCAPLUS
DOCUMENT NUMBER: 139:245905
TITLE: Process for preparation of optically active β-hydroxy esters
INVENTOR(S): Yamano, Toru; Taya, Naohiro; Ojida, Akio
PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd., Japan
SOURCE: PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

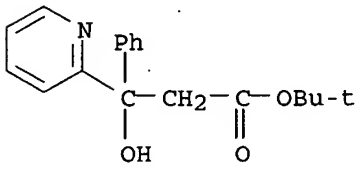
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003074487	A1	20030912	WO 2003-JP2563	20030305
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2478485	AA	20030912	CA 2003-2478485	20030305
JP 2003327577	A2	20031119	JP 2003-58506	20030305
EP 1489070	A1	20041222	EP 2003-708491	20030305
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2005107433	A1	20050519	[redacted]	20030305
[redacted]				A 20020306
			WO 2003-JP2563	W 20030305

OTHER SOURCE(S): MARPAT 139:245905
ED Entered STN: 14 Sep 2003
AB This invention pertains to a method for producing optically active β-hydroxy esters represented by the general formula of HO-C(R1R2)-C(R4R5)-CO2R3 [wherein R1 = H, (un)substituted hydrocarbyl, or heterocyclyl; R2 = (un)substituted heterocyclyl; R3 = (un)substituted

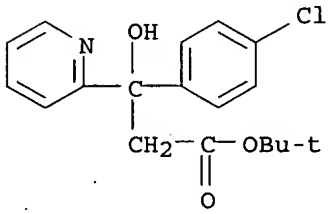
hydrocarbyl or heterocyclyl; R4 and R5 = independently H, halo, (un)substituted silyl, hydrocarbyl, or heterocyclyl], characterized by reacting R1COR2 with X-**Zn**-C(R4R5)-CO2R3 [where X= halo] in the presence of a cinchona alkaloid. For example, 2-benzoylpyridine was reacted with a **Reformatskii** reagent in THF in the presence of cinchonine and pyridine to give 3-hydroxy-3-phenyl-3-(pyridin-2-yl)propionic acid tert-Bu ester (98%) with 90% e.e. This invention provides a method to make optically active β-hydroxy esters in high yield with high e.e.

IT **596806-39-2P 596806-40-5P**
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**
(optically active; preparation of optically active hydroxy esters using **Reformatskii** reagent)

RN 596806-39-2 HCAPLUS
CN 2-Pyridinepropanoic acid, β-hydroxy-β-phenyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 596806-40-5 HCAPLUS
CN 2-Pyridinepropanoic acid, β-(4-chlorophenyl)-β-hydroxy-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IC ICM C07D213-55
ICS C07D233-64
CC 27-16 (Heterocyclic Compounds (One Hetero Atom))
ST prepn optically active hydroxy ester **Reformatskii** reagent
IT Alkaloids, uses
RL: CAT (Catalyst use); USES (Uses)
(cinchonan; preparation of optically active hydroxy esters using **Reformatskii** reagent)
IT Bases, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(preparation of optically active hydroxy esters using **Reformatskii** reagent)
IT 51656-70-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(**Reformatskii** reagent; preparation of optically active hydroxy esters using **Reformatskii** reagent)
IT 110880-32-5P 463304-65-6P 463304-71-4P 463304-72-5P
596806-39-2P 596806-40-5P
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**

(optically active; preparation of optically active hydroxy esters using **Reformatskii** reagent)

IT 56-54-2, Quinidine 118-10-5, Cinchonine 130-95-0, Quinine 485-71-2, Cinchonidine
RL: CAT (Catalyst use); USES (Uses)
(preparation of optically active hydroxy esters using **Reformatskii** reagent)

IT 91-02-1, 2-Benzoylpyridine 1121-60-4, 2-Pyridinecarboxaldehyde 1122-62-9, 2-Acetylpyridine 6318-51-0, 2-(4-Chlorobenzoyl)pyridine 33016-47-6 337536-18-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of optically active hydroxy esters using **Reformatskii** reagent)

IT 110-86-1, Pyridine, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(preparation of optically active hydroxy esters using **Reformatskii** reagent)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 [redacted]IGHT 2005 ACS on STN
ACCESSION NUMBER: 1990:118834 HCAPLUS
DOCUMENT NUMBER: 112:118834
TITLE: Preparation of phenyl(pyridyl)acryloylmorpholines as agrochemical fungicides
INVENTOR(S): Kamikado, Toshiya; Kando, Yasuyuki; Matsuura, Kazuho; Yamada, Junji
PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd., Japan
SOURCE: Eur. Pat. Appl., 40 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 330939	A2	19890906	EP 1989-102821	19890218
EP 330939	A3	19910508		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
AU 8929920	A1	19890824	AU 1989-29920	19890214
US 4954497	A	19900904	US 1989-310926	19890216
JP 02056464	A2	19900226	JP 1989-41034	19890220
JP 2819142	B2	19981030		
BR 8900766	A	19891017	BR 1989-766	19890221
HU 50170	A2	19891228	HU 1989-835	19890221
[redacted]			[redacted]	A [redacted]
			[redacted]	[redacted]

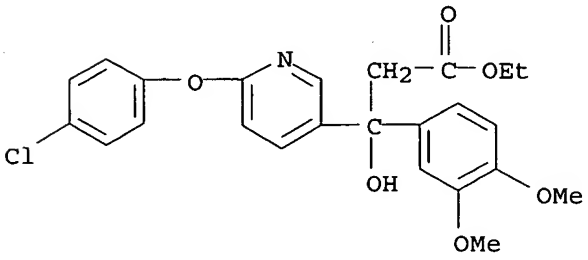
OTHER SOURCE(S): CASREACT 112:118834; MARPAT 112:118834
ED Entered STN: 31 Mar 1990
AB The title compds. [I; R = (un)substituted pyridyl; R1 = H, halo, alkyl; R2, R3 = alkoxy] were prepared, e.g., by condensation of (EtO)2P(O)CH2COR4 (II; R4 = morpholino) with benzoylpyridines. Thus, 2-chloro-5-trichloromethylpyridine was stirred 12 h at 70° with 2-(MeO)C6H4Me in PhNO2 containing **ZnCl2** and the product stirred 4 h at 80° in DMF with 2-ClC6H4OH which had been treated with NaH to give 2-(2-chlorophenoxy)-5-(3,4-dimethoxybenzoyl)pyridine which was refluxed 8 h in MeOCH2CH2OMe with II which has been treated with NaH to give title compound III. The latter gave 95-100% control of Phytophthora infestans on tomato seedlings and Pseudoperonospora cubensis on cucumber seedlings when

sprayed at 0.05 weight %.

IT **125551-43-1P**
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and reaction of, in preparation of agrochem. fungicides)

RN 125551-43-1 HCAPLUS

CN 3-Pyridinepropanoic acid, 6-(4-chlorophenoxy)-β-(3,4-dimethoxyphenyl)-β-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



IC ICM C07D213-64
ICS A01N043-40; C07D213-70; C07D213-74; C07D409-12; C07D405-12; C07D417-12; C07D213-65; C07D213-56; C07D213-71

CC 28-13 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 5

IT 122628-37-9P 125551-19-1P 125551-20-4P 125551-21-5P 125551-22-6P
125551-23-7P 125551-24-8P 125551-25-9P 125551-26-0P 125551-27-1P
125551-28-2P 125551-29-3P 125551-30-6P 125551-31-7P 125551-32-8P
125551-33-9P 125551-34-0P 125551-35-1P 125551-36-2P 125551-37-3P
125551-38-4P 125551-39-5P 125551-40-8P 125551-41-9P 125551-42-0P
125551-43-1P 125551-44-2P 125582-02-7P 125582-03-8P
125582-04-9P 125582-05-0P
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and reaction of, in preparation of agrochem. fungicides)

L67 ANSWER [redacted] PYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1976:508546 HCAPLUS
DOCUMENT NUMBER: 85:108546
TITLE: Antidepressant 3-(4-bromophenyl)-N-methyl-3-(3-pyridyl)allylamine salts
INVENTOR(S): Carlsson, Per A. E.; Carnmalm, Bernt S. E.; Ross, Svante B.; Ulff, Carl B. J.
PATENT ASSIGNEE(S): Astra Lakemedel AB, Swed.
SOURCE: Ger. Offen., 31 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2550005	A1	19760526	DE 1975-2550005	19751107
SE 7414622	A	19760524	SE 1974-14622	19741121
SE 388854	B	19761018		
SE 388854	C	19790705		
ZA 7506893	A	19761027	ZA 1975-6893	19751103
IL 48409	A1	19791031	IL 1975-48409	19751104

AU 7586627	A1	19770519	AU 1975-86627	19751114
AU 501915	B2	19790705		
NO 7503849	A	19760524	NO 1975-3849	19751117
NO 149775	B	19840312		
NO 149775	C	19840620		
DK 7505181	A	19760522	DK 1975-5181	19751118
DK 147179	B	19840507		
DK 147179	C	19841119		
ES 442758	A1	19770401	ES 1975-442758	19751118
FI 7503260	A	19760522	FI 1975-3260	19751119
FI 61484	B	19820430		
FI 61484	C	19820810		
DD 122528	C	19761012	DD 1975-189559	19751119
SU 686614	T	19790915	SU 1975-2189809	19751119
FR 2291751	A1	19760618	FR 1975-35539	19751120
FR 2291751	B1	19790921		
HU 171206	P	19771228	HU 1975-AA833	19751120
GB 1530804	A	19781101	GB 1975-47800	19751120
CA 1056834	A1	19790619	CA 1975-240075	19751120
PL 103999	P	19790731	PL 1975-184867	19751120
PL 103784	P	19790731	PL 1975-205688	19751120
BE 835802	A1	19760521	BE 1975-162059	19751121
NL 7513648	A	19760525	NL 1975-13648	19751121
JP 51076278	A2	19760701	JP 1975-140102	19751121
CH 614937	A	19791228	CH 1975-15129	19751121
NO 7601855	A	19760524	NO 1976-1855	19760601
ES 452171	A1	19771001	ES 1976-452171	19761007
ES 452172	A1	19771001	ES 1976-452172	19761007
ES 452173	A1	19771001	ES 1976-452173	19761007
US 4186202	A	19800129	US 1977-773397	19770302
AT 352130	B	19790910	AT 1978-1486	19780302
AT 7801486	A	19790215		
AT 352131	B	19790910	AT 1978-1487	19780302
AT 7801487	A	19790215		
AT 352132	B	19790910	AT 1978-1488	19780302
AT 7801488	A	19790215		
CH 615665	A	19800215	CH 1979-92	19790105
CH 626065	A	19811030	CH 1979-93	19790105
CH 626066	A	19811030	CH 1979-94	19790105
DK 8101296	A	19810323	DK 1981-1296	19810323
FI 8101434	A	19810511	FI 1981-1434	19810511
FI 8103271	A	19811020	FI 1981-3271	19811020
FI 64353	B	19830729		
FI 64353	C	19831110		
FI 8204475	A	19821227	FI 1982-4475	19821227
FI 8204476	A	19821227	FI 1982-4476	19821227
[redacted]			[redacted]	A 19741121
			NO 1975-3849	A 19751117
			US 1975-632698	A1 19751117
			DK 1975-5181	A 19751118
			FI 1975-3260	A 19751119
			CH 1975-15129	A 19751121
			AT 1975-8822	A 19780302

ED Entered STN: 12 May 1984

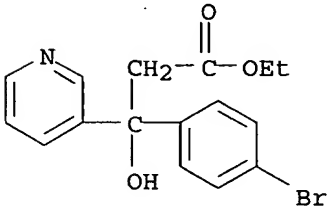
AB Allylamine I, isolated as its HCl, (Z) HCl, and (E) and (Z) oxalic acid salts, was prepared by treating alc. II (R = CH2OH) in Me2CO successively with HBr, PBr3, and MeNH2 or by dehydration of amine II (R = CH2NHMe) with 50% H2SO4. II (R = CH2OH) was prepared by **Reformatskii** reaction of 4-bromophenyl 3-pyridyl ketone with BrCH2CO2Et and reduction of the ester II (R = CO2Et). Treating II (R = CO2Et) with MeNH2 gave amide II (R =

CONHMe) which was reduced with BH3 to give II (R = CH2NHMe). (Z)-I.2HCl had ED50 15.2 μmoles/kg i.p. (mouse) in in vivo tests measuring 5-hydroxytryptamine-14C uptake by the brain.

IT **60324-61-0P**
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and reactions of)

RN 60324-61-0 HCAPLUS

CN 3-Pyridinepropanoic acid, β-(4-bromophenyl)-β-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



IC C07D213-38

CC 27-17 (Heterocyclic Compounds (One Hetero Atom))

IT 105-36-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(**Reformatskii** reaction with bromophenyl pyridyl ketone)

IT 14548-45-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(**Reformatskii** reaction with ethyl bromoacetate)

IT **60324-61-0P**
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and reactions of)

L67 A[redacted]PYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1973:58215 HCAPLUS

DOCUMENT NUMBER: 78:58215

TITLE: Potential hypolipidemic agents. V. Syntheses of some new 3-substituted pyridines. Effects on noradrenaline-stimulated free fatty acid mobilization

AUTHOR(S): Carlson, Lars A.; Hedbom, Christina; Misiorny, Alfons; Sjoberg, Berndt; Stjernstrom, Nils E.; Westin, Gertrud

CORPORATE SOURCE: King Gustaf Vth Res. Inst., Stockholm, Swed.

SOURCE: Acta Pharmaceutica Suecica [redacted], 9(5), 405-10
CODEN: APSXAS; ISSN: 0001-6675

DOCUMENT TYPE: Journal

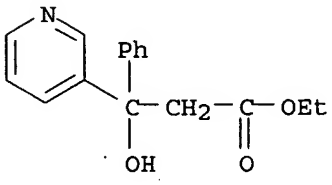
LANGUAGE: English

ED Entered STN: 12 May 1984

AB Sixteen 3-substituted pyridines [I, R = (CH2)3CN, (CH2)3CO2H, CD2OH, CHPrCO2Et, CHMe(OH)CH2CO2Et, etc.] and the pyridine oxides (II, R = CO2CH2CMe2OC6H4Cl-p (IV), CH2O2CCMe2OC6H4Cl-p (V)] were prepared Thus, I (R = (CH2)3Cl) was treated with NaCN to give I (R = (CH2)3CN) which was hydrolyzed to give I (R = (CH2)3CO2H). LiAlD4 reduction of I (R = CO2Et) gave I (R = CD2OH). I (R = CH2CO2Et) was alkylated with NaNH2 and EtBr to give I (R = CHEtCO2Et). IV and V were prepared by H2O2 oxidation of I. Noradrenaline-induced excessive free fatty acids in dogs were reduced by I and II. The inhibitory effects were related to nicotinic acid.

IT **39892-20-1P**
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**

(preparation of)
RN 39892-20-1 HCAPLUS
CN 3-Pyridinepropanoic acid, β-hydroxy-β-phenyl-, ethyl ester, hydrochloride (9CI) (CA INDEX NAME)



● HCl

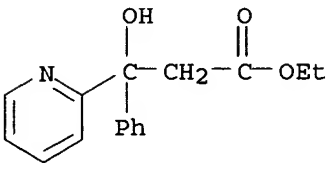
CC 27-17 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 1
IT 105-36-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(**Reformatsky** reactions with acylpyridines)
IT 350-03-8 1570-48-5 5424-19-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(**Reformatsky** reactions with ethyl bromoacetate)
IT 17270-50-7P 24476-61-7P 24476-62-8P 27678-09-7P 27828-72-4P
39892-10-9P 39892-11-0P 39892-13-2P 39892-14-3P 39892-15-4P
39892-16-5P 39892-17-6P 39892-18-7P 39892-19-8P **39892-20-1P**
39892-21-2P
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**
(preparation of)

L67 A[redacted] COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1969:512757 HCAPLUS
DOCUMENT NUMBER: 71:112757
TITLE: Local anesthetics. XXI. Derivatives of 3,3-disubstituted-3-hydroxypropionic acids
AUTHOR(S): Kurihara, Tozaburo; Kumamoto, Ko; Takeda, Hideo
CORPORATE SOURCE: Tohoku Coll. Pharm., Sendai, Japan
SOURCE: Annual Report of the Tohoku College of Pharmacy [redacted] No. 14, 51-8
CODEN: TYKNAQ; ISSN: 0495-7342
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 12 May 1984
AB A mixture of 15 g. 2-thienyl Ph ketone, 16 g. EtO2CCH2Br, and 50 ml. C6H6, after addition of 6 g. **Zn** and 0.5 g. Cu, was refluxed 3 hrs. to give 12 g. Et 3-phenyl-3-thienyl-3-hydroxypropionate (I), m. 53° (EtOH). Hydrolysis of I by refluxing with 10% NaOH 3 hrs. gave 46% 3-phenyl-3-thienyl-3-hydroxypropionic acid (II), m. 170° (EtOH). Similarly prepared were the following R1R2C(OH)CH2CO2Et (R1, R2, m.p., and m.p. of the free acid given): thienyl, thienyl (IIa), 48°, 131°; 2-pyridyl, Ph, 46°, 171°; 2-thiazolyl, Ph, 95°, 128°; 2-furyl, Ph, 32°, 155°; and 2-pyrrolyl, Ph, 75-6°, 147°. Refluxing 5 g. II with 50 ml. 10% HO2CCO2H afforded 3.4 g. 3-thienyl-3-phenylacrylic acid (III), m. 113° (EtOH-Me2CO). Heating 2 g. Et2NCH2CH2Cl and 2 g. III in 10 ml. iso-PrOH gave 1.5 g. dimethylaminoethyl 3-phenyl-3-thienyl-3-

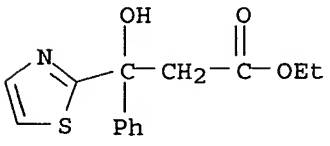
hydroxypropionate-HCl, m. 156° (absolute EtOH). Similarly prepared were the following R3R4C(OH)CH2-CO2CHR5CH2R6-HCl (R3, R4, R5, R6, and m.p. given): thienyl, Ph, H, Me2N, 158-9°; thienyl, Ph, H, piperidino, 165°; thienyl, Ph, H, morpholino, 158-60°; thienyl, thienyl, H, Et2N, 140-1°; thienyl, thienyl, H, piperidino, 147-9°; 2-thiazolyl, Ph, H, piperidino, 151-2°; and thienyl, Ph, Me, Et2N; and also the following R7R8C:CHCO2CHR9CH2R10-HCl (R7, R8, R9, R10, and m.p. given): thienyl, phenyl, H, Et2N, 136-8°; thienyl, Ph, H, piperidino, 152°; thienyl, Ph, H, morpholino, 149°; thienyl, Ph, Me, Et2N, 124-6°; and thienyl, thienyl, H, Et2N, 129°. Heating 2 g. IIa and 2 g. (2-piperidinoethyl)amine (IV) at 140-50° 3 hrs. afforded 2.4 g. N-(2-piperidinoethyl)-3,3-dithienyl-3-hydroxypropionamide-HCl, m. 156°. Similarly prepared were the following R11R12C(OH)CH2CONHCH2CH 2R13-HCl (R11, R12, R13, and m.p. given): thienyl, Ph, Et2N, 98°; thienyl, Ph, piperidino, 166°; thienyl, Ph, morpholino, 116°; thienyl, thienyl, Et2N, 128-30°; and thienyl, thienyl, Bu2N, syrup. II (2 g.) in 10 ml. C6H6 was warmed with 6 g. SOCl2 2 hrs. After removal of excess SOCl2, 2 g. IV in 5 ml. C6H6 was added and the mixture kept at room temperature 5 hrs. to give 1.8 g. N-(2-piperidinoethyl)-3-phenyl-3-thienylacrylamide-HCl, m. 112°. Topical local anesthetic activities of the compds. are described.

IT **6651-76-9P 23997-15-1P 23997-17-3P 23997-24-2P 23997-37-7P 23997-38-8P 23997-40-2P**
RL: **SPN (Synthetic preparation); PREP (Preparation)**
(preparation of)

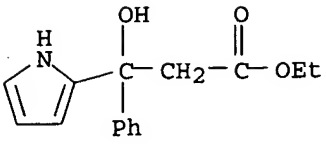
RN 6651-76-9 HCAPLUS
CN 2-Pyridinehydracrylic acid, β-phenyl-, ethyl ester (7CI, 8CI) (CA INDEX NAME)



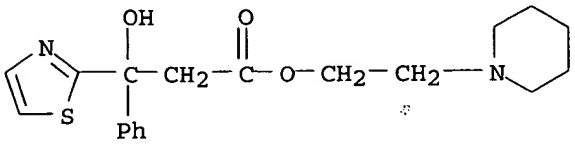
RN 23997-15-1 HCAPLUS
CN 2-Thiazolehydracrylic acid, β-phenyl-, ethyl ester (8CI) (CA INDEX NAME)



RN 23997-17-3 HCAPLUS
CN Pyrrole-2-hydracrylic acid, β-phenyl-, ethyl ester (8CI) (CA INDEX NAME)

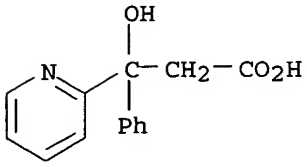


RN 23997-24-2 HCAPLUS
CN 2-Thiazolehydracrylic acid, β-phenyl-, 2-piperidinoethyl ester hydrochloride (8CI) (CA INDEX NAME)

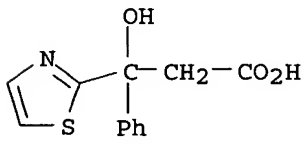


● HCl

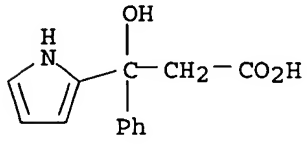
RN 23997-37-7 HCAPLUS
CN 2-Pyridinehydracrylic acid, β-phenyl- (7CI, 8CI) (CA INDEX NAME)



RN 23997-38-8 HCAPLUS
CN 2-Thiazolehydracrylic acid, β-phenyl- (8CI) (CA INDEX NAME)



RN 23997-40-2 HCAPLUS
CN Pyrrole-2-hydracrylic acid, β-phenyl- (8CI) (CA INDEX NAME)

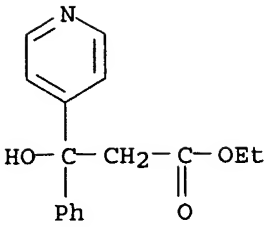


CC 27 (Heterocyclic Compounds (One Hetero Atom))
IT **6651-76-9P** 23997-11-7P 23997-12-8P 23997-13-9P

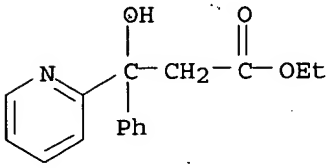
23997-15-1P 23997-16-2P **23997-17-3P** 23997-18-4P
23997-19-5P 23997-20-8P 23997-21-9P 23997-22-0P 23997-23-1P
23997-24-2P 23997-25-3P 23997-26-4P 23997-27-5P
23997-28-6P 23997-29-7P 23997-30-0P 23997-31-1P 23997-32-2P
23997-33-3P 23997-34-4P 23997-35-5P 23997-36-6P **23997-37-7P**
23997-38-8P 23997-39-9P **23997-40-2P**
RL: **SPN (Synthetic preparation); PREP (Preparation)**
(preparation of)

[redacted]

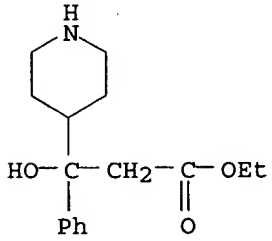
L67 ANSWER 16 OF 27 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1962:462632 HCAPLUS
DOCUMENT NUMBER: 57:62632
ORIGINAL REFERENCE NO.: 57:12426b-f
TITLE: Palladium-catalyzed hydrogenation of pyridines
AUTHOR(S): Walker, Gordon N.
CORPORATE SOURCE: Ciba Pharm. Co., Summit, NJ
SOURCE: Journal of Organic Chemistry [redacted], 27, 2966-7
CODEN: JOCEAH; ISSN: 0022-3263
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
ED Entered STN: 22 Apr 2001
AB In reduction of pyridines to the corresponding piperidines, about 0.3-0.5 (by weight) ratio of 10% Pd-C to compound, AcOH as solvent, and usually reaction temps. and pressures of 70-80° and 3-4 atmospheric, resp., were used. Product from phenylglyoxal diethyl acetal and 2-pyridyllithium reduced as above gave (2-C5H10N)PhC(OH)CH(OEt)2, m. 180-1°; the corresponding aldehyde m. 149-50°. A formamide-like substance prepared by dilute acid hydrolysis of the compound was converted to an oxime, m. 133-5°, which was also reduced to (2-C5H10N)PhC(OH)CH2NH2.2HCl, m. 130°. Similarly, 2-(C5H4N)PhC(OH)CH2OH, obtained by borohydride reduction of the aldehyde, gave the corresponding piperidyl compound, m. 130-2°. The compound from the ethylene acetal of hydroxymethyleneacetophenone with 2-pyridyllithium was reduced to (2-C5H10N)PhC(OH)CH2C3H5O2 (HCl m. 107° (decomposition)), and from similar ethylenedioxymethylene-substituted phenylacetones and deoxybenzoins were synthesized in the same manner, pyridyl- and piperidylcarbinols. I, m. 185.57.0°, was formed upon Pd reduction at 25° of (2-C5H4N)PhC(OH)CH2CO2Et, in turn obtained by **Reformatskii** reaction of 2-benzoylpyridine with BrCH2CO2Et. The 4-benzoylpyridine **Reformatskii** product, m. 82-4% gave PhC(OH)(CH2CO2Et)C5H10N, m. 158-160°. Reduction of the 2-, 3-, and 4-pyridyl derivs. of 2-oxo-3-methylenedihydroindole in EtOAc at room temperature gave the 2-, 3-, and 4-pyridyl derivs., m. 130-2°, 139-41°, and 199-201°, resp. Further reduction in AcOH or merely in EtOAc at 75° with Pd-C gave the 2-, 3-, and 4-piperidyl derivs., m. 140-2°, 137-8°, and 223-6°, resp.
IT **2293-57-4**, 4-Pyridinehydracrylic acid, β-phenyl-, ethyl ester
6651-76-9, 2-Pyridinehydracrylic acid, β-phenyl-, ethyl ester
97739-16-7, 4-Piperidinehydracrylic acid, β-phenyl-, ethyl ester
(preparation of)
RN 2293-57-4 HCAPLUS
CN 4-Pyridinehydracrylic acid, β-phenyl-, ethyl ester (7CI, 8CI) (CA INDEX NAME)



RN 6651-76-9 HCAPLUS
CN 2-Pyridinehydracrylic acid, β-phenyl-, ethyl ester (7CI, 8CI) (CA INDEX NAME)



RN 97739-16-7 HCAPLUS
CN 4-Piperidinehydracrylic acid, β-phenyl-, ethyl ester (7CI) (CA INDEX NAME)



CC 31 (Heterocyclic Compounds-One Hetero Atom)
IT **2293-57-4**, 4-Pyridinehydracrylic acid, β-phenyl-, ethyl ester
3358-73-4, 2-Indolinone, 3-(2-piperidylmethyl)- 3358-74-5, 2-Indolinone, 3-(3-piperidylmethyl)- 3367-84-8, 2-Indolinone, 3-(2-pyridylmethyl)- 3367-85-9, 2-Indolinone, 3-(3-pyridylmethyl)- 3367-86-0, 2-Indolinone, 3-(4-pyridylmethyl)- 3478-77-1, 2-Indolinone, 3-(4-piperidylmethyl)- **6651-76-9**, 2-Pyridinehydracrylic acid, β-phenyl-, ethyl ester 91955-29-2, 2-Pyridineglycolaldehyde, α-phenyl-, oxime 92028-60-9, 1,2-Ethanediol, 1-phenyl-1-(2-pyridyl)- 92197-00-7, 1,2-Ethanediol, 1-phenyl-1-(2-piperidyl)- 92250-65-2, 3(2H)-Indolizinone, hexahydro-1-hydroxy-1-phenyl- 92903-51-0, 2-Pyridineglycolaldehyde, α-phenyl- 93087-96-8, 2-Piperidinemethanol, α-(aminomethyl)-α-phenyl-, dihydrochloride 94907-41-2, 2-Piperidinemethanol, α-(diethoxymethyl)-α-phenyl-, hydrochloride 94907-41-2, 2-Piperidineglycolaldehyde, α-phenyl-, diethyl acetal, hydrochloride 97637-17-7, 2-Piperidinemethanol, α-(1,3-dioxolan-2-ylmethyl)-α-phenyl-, hydrochloride **97739-16-7**, 4-Piperidinehydracrylic acid, β-phenyl-, ethyl ester 97786-14-6, 2-Pyridinemethanol, α-(1,3-dioxolan-2-ylmethyl)-α-phenyl-
(preparation of)

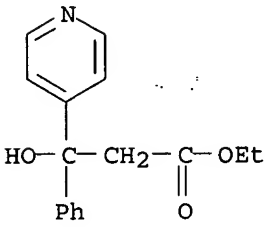
L67 [redacted] COPYRIGHT 2005 ACS on STN
ACCESSION [redacted]1961:22751 HCAPLUS
DOCUMENT NUMBER: 55:22751
ORIGINAL REFERENCE NO.: 55:4497c-i
TITLE: The **Reformatskii** reaction of ketones containing the pyridine nucleus
AUTHOR(S): De Fazi, Remo; Carboni, Salvatore; Marsili, Antonio
CORPORATE SOURCE: Univ. Pisa, Italy
SOURCE: Gazzetta Chimica Italiana [redacted]89, 1701-8
CODEN: GCITA9; ISSN: 0016-[redacted]
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
ED Entered STN: 22 Apr 2001
AB Optimal conditions for the normal reaction of [redacted] and 2-BzC5H4N (II) with [redacted] or BrCHMeCO2Et (IV) in the **Reformatskii** reaction were inves[redacted], [redacted] b. 154-5°), a[redacted]n 20 ml. dry C6H6 heated over a free flame to initiate the reaction, the mixture cooled 5-10 min. (ice bath), refluxed 30 min. on a steam bath, the cooled mixture diluted with 50 ml. C6H6 and 150 ml. 10% NH4Cl in NH4OH, stirred vigorously, the aqueous phase washed with 20 ml. C6H6, the combined C6H6 phases washed with H2O, the dried solution evaporated in vacuo, the oily product diluted with 1 ml. MeOH, kept 24 hrs. at 20°, filtered, and the product washed with Et2O gave 5-7 g. 4-C5H4NCPh(OH)CH2CO2Et (V), m. 99-100° (MeOH). Similarly were prepared the corresponding 4-C5H4NCPh(OH)CHMeCO2Et (VI), m. 121-2° (MeOH), the analogous 2-C5H4NCPh(OH)CH2CO2Et (VII), m. 65-7° (MeOH), and 2-C5H4NCPh(OH)CHMeCO2Et (VIII), m. 51-3° (C6H6). V (2 g.) in 25 ml. C6H6 refluxed 8 hrs. with 5 g. P2O5, the residue on decantation decomposed with 10% HCl, the mixture extracted with Et2O, and made alkaline with concentrated NH4OH gave 1.6-1.7 g. 4-C5H4NCPh:CHCO2Et, m. 104-5° (MeOH), also obtained (0.4-0.5 g.) by keeping 0.5 g. V in 2 ml. 98% H2SO4 at 20° 45 min., pouring into H2O, basifying the cooled solution with concentrated NH4OH, and recrystg. the precipitate Similarly, dehydration with either P2O5 in C6H6 or contact with concentrated H2SO4 15-20 min. converted VI into 4-C5H4NCPh:CMeCO2Et, m. 53-5° (Et2O). Dehydration of VII and VIII with concentrated H2SO4 90 and 60 min., resp., gave the corresponding 2-C5H4NCPh:CHCO2Et, m. 47-8.5° (C6H6Et2O), and 2-C5H4NCPh:CMeCO2Et, m. 96-8° (C6H6). I (10 g.) and 7.7 g. nonactivated Zn in 30 ml. C6H6 (dried over Na) treated 1 hr. dropwise with 10 g. III, the mixture refluxed 2 hrs., the cooled mixture suction-filtered, the residue washed with C6H6 and Et2O, taken up in 500 ml. MeOH, filtered, the solution evaporated, and the residue crystallized from Ac2O gave a yellowish addition compound, 2I.ZnBr2 (IX), m. 242-5°, taken up in dilute HCl and the solution made alkaline with NH4OH to precipitate I. Similarly, II gave the corresponding addition compound, 2II.ZnBr2 (X), m. 134-8° (alc.). XI and X were prepared quant. by addition of equivalent amts. of I or II to ZnBr2 in alc. IX (5 g.), 2 g. activated Zn, and 3 g. III refluxed 6 hrs. in 20 ml. C6H6, the mixture decomposed with NH4ClNH4OH, the C6H6 layer extracted with 20% HCl, the acid extract made alkaline with concentrated NH4OH, filtered, and the product crystallized from MeOH gave 0.7-1.0 g. V together with unchanged I. Analogous procedures converted 5.0 g. X after 2-3 hrs. refluxing into 2.0-2.75 g. VII. For successful operation of the **Reformatskii** reaction it

was shown that rigorously anhydrous C6H6, recently purified α-bromo ester, and finely divided activated Zn were essential.

IT **2293-57-4**, 4-Pyridinehydracrylic acid, β-phenyl-, ethyl ester **6651-76-9**, 2-Pyridinehydracrylic acid, β-phenyl-, ethyl ester **110423-81-9**, 4-Pyridinehydracrylic acid, α-methyl-β-phenyl-, ethyl ester **110439-97-9**, 2-Pyridinehydracrylic acid, α-methyl-β-phenyl-, ethyl ester
(preparation of)

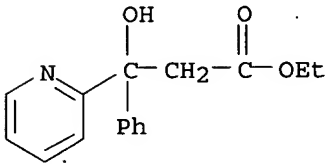
RN 2293-57-4 HCAPLUS

CN 4-Pyridinehydracrylic acid, β-phenyl-, ethyl ester (7CI, 8CI) (CA INDEX NAME)



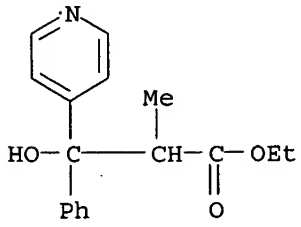
RN 6651-76-9 HCAPLUS

CN 2-Pyridinehydracrylic acid, β-phenyl-, ethyl ester (7CI, 8CI) (CA INDEX NAME)



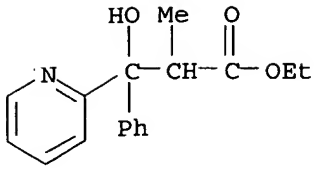
RN 110423-81-9 HCAPLUS

CN 4-Pyridinehydracrylic acid, α-methyl-β-phenyl-, ethyl ester (6CI) (CA INDEX NAME)



RN 110439-97-9 HCAPLUS

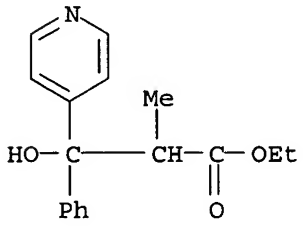
CN 2-Pyridinehydracrylic acid, α-methyl-β-phenyl-, ethyl ester (6CI) (CA INDEX NAME)



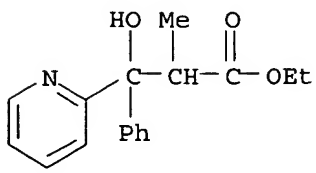
CC 10G (Organic Chemistry: Heterocyclic Compounds)
IT Ketones
(pyridyl, **Reformatskii** reaction with)
IT **Reformatskii** reaction
(with pyridyl ketones)
IT **2293-57-4**, 4-Pyridinehydracrylic acid, β-phenyl-, ethyl ester
6651-76-9, 2-Pyridinehydracrylic acid, β-phenyl-, ethyl ester
6860-95-3, Acetophenone, 3',4'-(isopropylidenedioxy)- 21656-87-1,
4-Pyridineacrylic acid, β-phenyl-, ethyl ester 99362-51-3,
3-Pyridineacetic acid, α-amino-α,6-dimethyl- 109470-27-1,
4-Pyridineacrylic acid, α-methyl-β-phenyl-, ethyl ester
109471-61-6, 2-Pyridineacrylic acid, α-methyl-β-phenyl-, ethyl
ester **110423-81-9**, 4-Pyridinehydracrylic acid,
α-methyl-β-phenyl-, ethyl ester **110439-97-9**,
2-Pyridinehydracrylic acid, α-methyl-β-phenyl-, ethyl ester
860449-22-5, 2-Pyridineacrylic acid, β-phenyl-, ethyl ester
(preparation of)

[redacted]

L67 ANSWER 18 OF 27 CAOLD COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: CA55:4497c CAOLD
TITLE: **Reformatskii** reaction on ketones containing the pyridine nucleus
AUTHOR NAME: De Fazi, Remo; Carboni, S.; Marsili, A.
IT **110423-81-9 110439-97-9**
RN 110423-81-9 CAOLD
CN 4-Pyridinehydracrylic acid, α-methyl-β-phenyl-, ethyl ester (6CI) (CA INDEX NAME)



RN 110439-97-9 CAOLD
CN 2-Pyridinehydracrylic acid, α-methyl-β-phenyl-, ethyl ester (6CI) (CA INDEX NAME)



IT **19525-67-8 99362-51-3** 109470-27-1 109471-61-6
110423-81-9 110439-97-9

=> d ibib ab hitstr kwic 19
YOU HAVE REQUESTED DATA FROM FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX' - CONTINUE? (Y)/N:y

L67 [redacted] ULL on STN
ACCESSION NUMBER: 2005:125043 USPATFULL
TITLE: Process for production of optically active compounds
INVENTOR(S): Yamano, Toru, Hyogo, JAPAN
Taya, Naohiro, Hyogo, JAPAN

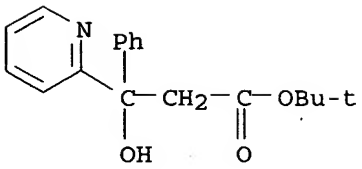
	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2005107433	A1	20050519	
APPLICATION INFO.:	US 2003-506309	A1	20030305	(10)
	WO 2003-JP2563		20030305	

	NUMBER	DATE
PRIORITY INFORMATION:	JP 2003-200260402	20020306

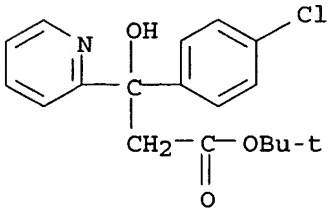
DOCUMENT TYPE: [redacted]
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: TAKEDA PHARMACEUTICALS NORTH AMERICA, INC, INTELLECTUAL PROPERTY DEPARTMENT, 475 HALF DAY ROAD, SUITE 500, LINCOLNSHIRE, IL, 60069, US
NUMBER OF CLAIMS: 6
EXEMPLARY CLAIM: 1
LINE COUNT: 1076
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a method for producing an optically active β-hydroxy ester compound represented by the general formula: ##STR1## wherein

R.sup.1 represents an optionally substituted hydrocarbon group and the like,
R.sup.2 represents a nitrogen-containing heterocyclic group different from R.sup.1, which is represented by the general formula: ##STR2## wherein the ring may be substituted and the like,
R.sup.3 represents an optionally substituted hydrocarbon group and the like,
R.sup.4 and R.sup.5 represent, the same or different, a hydrogen atom, a halogen atom and the like, the symbol "*" represents an optically active center, which comprises reacting in the presence of a cinchona alkaloid and the like a compound represented by the general formula: ##STR3## wherein R.sup.1 and R.sup.2 are as defined above with a compound represented by the general formula: ##STR4## wherein R.sup.3, R.sup.4 and R.sup.5 are as defined above, and X is a halogen atom.

IT **596806-39-2P 596806-40-5P**
(optically active; preparation of optically active hydroxy esters using Reformatskii reagent)
RN 596806-39-2 USPATFULL
CN 2-Pyridinepropanoic acid, β-hydroxy-β-phenyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 596806-40-5 USPATFULL
CN 2-Pyridinepropanoic acid, β-(4-chlorophenyl)-β-hydroxy-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



SUMM A reaction between aldehyde or ketone and a reagent prepared from α-haloester and **zinc**, a so-called Reform at sky reaction, is extremely useful as a method for producing β-hydroxy esters because of its high. . . Chem. Soc., Chem. Commun., 1993, 811; Tetrahedron, 1973, 29, 3659; and Tetrahedron, 1997, 53 (10), 3787. In addition, a stereoselective **Reformatsky** reaction using an asymmetric ligand in a reaction with ketone having a heterocyclic ring has never been studied.

SUMM If a **Reformatsky** reaction were proceeded streoselectively, an optically active β-hydroxy ester would be obtained. Since a **Reformatsky** reaction allows coexisting of functional groups such as ester, amide and the like, it will be a high versatile method.. . .

DETD The compound represented by the general formula (II) may be produced by reacting α-haloester and **zinc** according to a method described in, for example, Jikken Kagaku Kouza, vol. 25, 4th ed., p. 72, Chem. Soc. Japan, Maruzen, 1992. Powder-, flake-, and wool-like **zinc** may be used. These can be activated by diluted hydrochloric acid treatment and the like prior to use. Further, trimethylsilyl. . . .

DETD . . . atmosphere, cinchonine (440 mg, 1.0 mmol) was suspended in tetrahydrofuran (absolute, 2.0 mL), and to this suspension was added a **Reformatsky** reagent (0.5 M; 8.0 mL, 4.0 mmol) dropwise under ice-cooling. After stirring for 10 minutes, pyridine (0.30 mL, 2 mmol). . .

DETD . . . atmosphere, cinchonine (220 mg, 0.5 mmol) was suspended in tetrahydrofuran (absolute, 1.0 mL), and to this suspension was added a **Reformatsky** reagent (0.52 M; 7.7 mL, 1.51 mmol) dropwise under ice-cooling. After stirring for 10 minutes, pyridine (0.15 mL, 2 mmol). . .

DETD . . . atmosphere, cinchonine (440 mg, 1.0 mmol) was suspended in tetrahydrofuran (absolute, 2.0 mL), and to this suspension was added a **Reformatsky** reagent (0.5 M; 8.0 mL, 4.0 mmol) dropwise under ice-cooling. After stirring for 10 minutes, pyridine (0.30 mL, 2 mmol). . .

DETD . . . atmosphere, cinchonine (440 mg, 1.0 mmol) was suspended in tetrahydrofuran (absolute, 2.0 mL), and to this suspension was added a **Reformatsky** reagent (0.5 M; 8.0 mL, 4.0 mmol) dropwise under ice-cooling. After stirring for 10 minutes, pyridine (0.30 mL, 2 mmol).

DETD . . . atmosphere, cinchonine (440 mg, 1.0 mmol) was suspended in tetrahydrofuran (absolute, 2.0 mL), and to this suspension was added a **Reformatsky** reagent (0.5 M; 8.0 mL, 4.0 mmol) dropwise under ice-cooling. After stirring for 10 minutes, pyridine (0.30 mL, 2 mmol).

DETD . . . atmosphere, cinchonine (440 mg, 1.0 mmol) was suspended in tetrahydrofuran (absolute, 2.0 mL), and to this suspension was added a **Reformatsky** reagent (0.4 M; 10.0 mL, 4.0 mmol) dropwise under ice-cooling. After stirring for 10 minutes, pyridine (0.30 mL, 2 mmol).

IT 110880-32-5P 463304-65-6P 463304-71-4P 463304-72-5P
596806-39-2P 596806-40-5P
(optically active; preparation of optically active hydroxy esters using Reformatskii reagent)

=> d ibib ab hitstr kwic 20-25
YOU HAVE REQUESTED DATA FROM FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX' - CONTINUE? (Y)/N:y

L67 [redacted]n STN
ACCESSION NUMBER: 2005:50743 USPATFULL
TITLE: Process for producing fused imidazole compound, **reformatsky** reagent in stable form, and process for producing the same
INVENTOR(S): Nuwa, Shigeru, Hyogo, JAPAN
Handa, Syoji, Yamaguchi, JAPAN
Miki, Shokyo, Osaka, JAPAN

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2005043544	A1	20050224	
APPLICATION INFO.:	US 2004-500999	A1	20041001	(10)
	WO 2003-JP92		20030109	

	NUMBER	DATE
PRIORITY INFORMATION:	[redacted]	20020110
	[redacted]	0925

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: TAKEDA PHARMACEUTICALS NORTH AMERICA, INC, INTELLECTUAL PROPERTY DEPARTMENT, 475 HALF DAY ROAD, SUITE 500, LINCOLNSHIRE, IL, 60069
NUMBER OF CLAIMS: 49
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Page(s)
LINE COUNT: 4361
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides an industrially advantageous process for producing a steroid C.sub.17,20 lyase inhibitor represented by the general formula (I): ##STR1##

and a **Reformatsky** reagent in a stable form suitable for the process.

In the present invention, a compound represented by the general formula

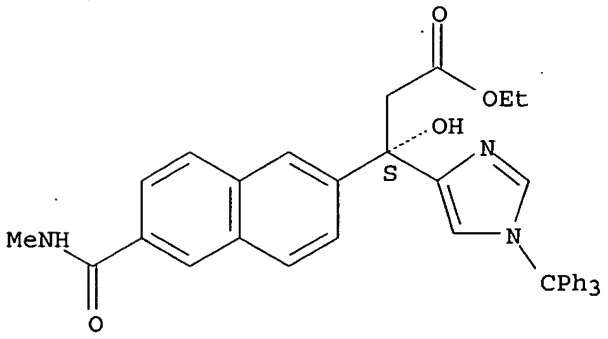
(I) is produced by reducing a specific β-hydroxy ester compound derivative or a salt thereof obtained from a specific carbonyl compound in a **Reformatsky** reaction in the presence of a metal hydride complex and a metal halide, and then subjecting it to a ring-closing reaction. In the above **Reformatsky** reaction, it is useful to use a stable solution of a compound represented by the general formula BrZnCH.sub.2COOC.sub.2H.sub.5 or a crystal of the compound which is represented by the formula (BrZnCH.sub.2COOC.sub.2H.sub.5.THF).sub.2.

IT **566200-78-0P**, Ethyl (3S)-3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate **566200-80-4P**, Isopropyl (3S)-3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate **566200-92-8P** **566200-93-9P** **566200-97-3P**, Ethyl 3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate **566200-98-4P**, tert-Butyl (3S)-3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate
(preparation of fused imidazole compound steroid lyase inhibitor by Reformatskii reaction using stable alkoxycarbonylmethylzinc bromide, reduction of β-hydroxy esters, and cyclization)

RN 566200-78-0 USPATFULL

CN 1H-Imidazole-4-propanoic acid, β-hydroxy-β-[6-[(methylamino)carbonyl]-2-naphthalenyl]-1-(triphenylmethyl)-, ethyl ester, (βS)- (9CI) (CA INDEX NAME)

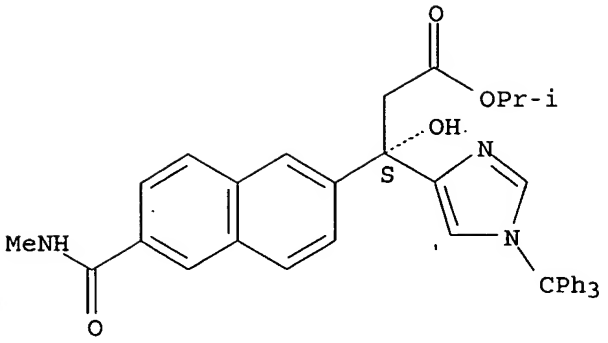
Absolute stereochemistry.



RN 566200-80-4 USPATFULL

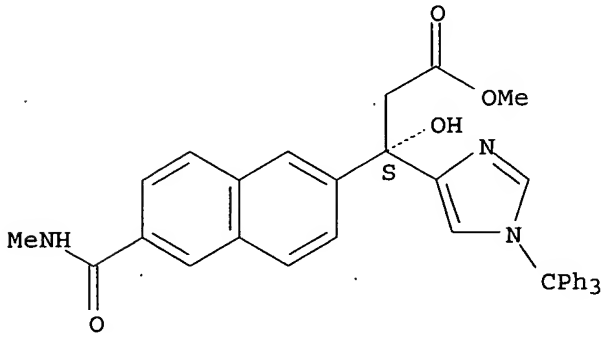
CN 1H-Imidazole-4-propanoic acid, β-hydroxy-β-[6-[(methylamino)carbonyl]-2-naphthalenyl]-1-(triphenylmethyl)-, 1-methylethyl ester, (βS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



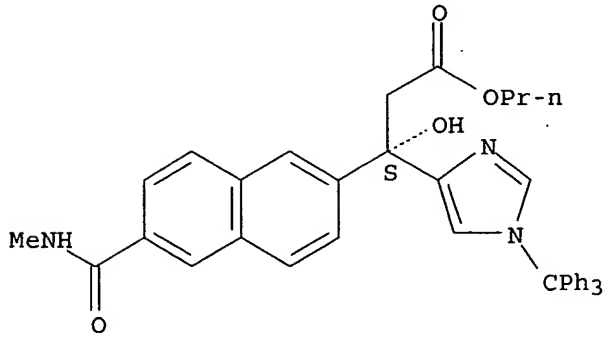
RN 566200-92-8 USPATFULL
CN 1H-Imidazole-4-propanoic acid, β-hydroxy-β-[6-[(methylamino)carbonyl]-2-naphthalenyl]-1-(triphenylmethyl)-, methyl ester, (βS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



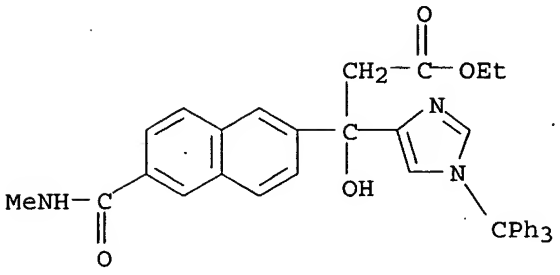
RN 566200-93-9 USPATFULL
CN 1H-Imidazole-4-propanoic acid, β-hydroxy-β-[6-[(methylamino)carbonyl]-2-naphthalenyl]-1-(triphenylmethyl)-, propyl ester, (βS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



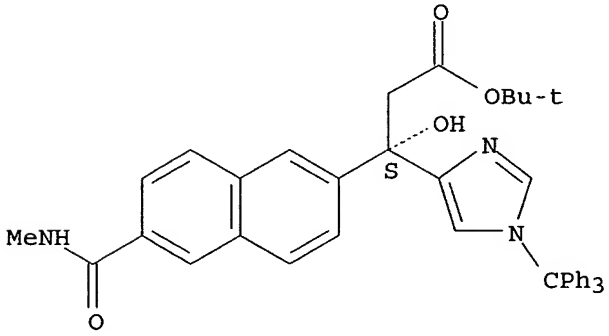
RN 566200-97-3 USPATFULL
CN 1H-Imidazole-4-propanoic acid, β-hydroxy-β-[6-[(methylamino)carbonyl]-2-naphthalenyl]-1-(triphenylmethyl)-, ethyl

ester (9CI) (CA INDEX NAME)

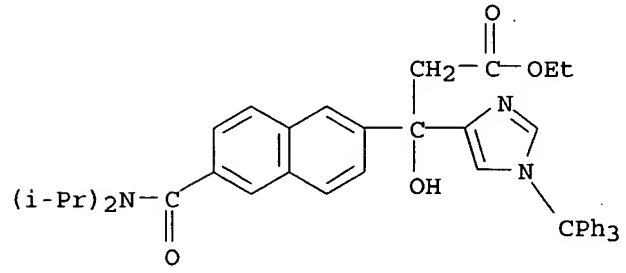


RN 566200-98-4 USPATFULL
CN 1H-Imidazole-4-propanoic acid, β-hydroxy-β-[6-[(methylamino)carbonyl]-2-naphthalenyl]-1-(triphenylmethyl)-, 1,1-dimethylethyl ester, (βS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **426219-55-8P**
(preparation of fused imidazole compound steroid lyase inhibitor by Reformatskii reaction using stable alkoxycarbonylmethylzinc bromide, reduction of β-hydroxy esters, and cyclization)
RN 426219-55-8 USPATFULL
CN 1H-Imidazole-4-propanoic acid, β-[6-[[bis(1-methylethyl)amino]carbonyl]-2-naphthalenyl]-β-hydroxy-1-(triphenylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



TI Process for producing fused imidazole compound, **reformatsky** reagent in stable form, and process for producing the same

AB and a **Reformatsky** reagent in a stable form suitable for the process.

AB . . . by reducing a specific β-hydroxy ester compound derivative or a salt thereof obtained from a specific carbonyl compound in a **Reformatsky** reaction in the presence of a metal hydride complex and a metal halide, and then subjecting it to a ring-closing reaction. In the above **Reformatsky** reaction, it is useful to use a stable solution of a compound represented by the general formula BrZnCH.sub.2COOC.sub.2H.sub.5 or a. . .

SUMM [0002] In addition, the present invention relates to a **Reformatsky** reagent in a stable form and to a process for producing such a **Reformatsky** reagent at a high reproducibility. More specifically, the **Reformatsky** reagent according to the present invention includes a stable solution of the **Reformatsky** reagent and a crystal thereof.

SUMM . . . Synthesis Chemistry), 1987, 45, 1148), (3) a process comprising reducing an ester with tetrahydrofuran in the presence of sodium borohydride, **zinc** chloride and tertiary amine, and the like.

SUMM [0011] The **Reformatsky** reaction is a useful reaction in synthesizing β-hydroxy acid and its derivatives, and is reviewed in Organic Reactions, 1975, 22,. . .

SUMM [0012] According to the **Reformatsky** reaction, α-bromoester may be reacted with a carbonyl compound such as aldehyde and ketone in the presence of **zinc** metal to form β-hydroxy ester, which is then hydrolyzed to form a corresponding β-hydroxy acid. Upon adequately selecting ester or. . .

SUMM [0013] Moreover, the **Reformatsky** reaction is aggressively applied to a field of asymmetric syntheses in recent years. Therefore, it goes without saying that the **Reformatsky** reaction becomes more useful in the near future.

SUMM [0014] As a reagent used in the **Reformatsky** reaction (**Reformatsky** reagent), ethyl **bromozincacetate** obtained by reacting **zinc** with ethyl bromoacetate is well known. In particular, a preparation of ethyl **bromozincacetate** is described in detail in Monatshefte fur Chemie, 1953, 910; J. Org. Chem., 1987, 52, 4796; Organometallics, 1984, 3, 1403;. . .

SUMM [0038] Further, the present inventors made a detailed research on the prior art to obtain ethyl **bromozincacetate** which is most common among **Reformatsky** reagents.

SUMM [0039] For example, Bull. Soc. Chim. Fr., 1969, 2471 describes that a reaction in synthesizing a **Reformatsky** reagent proceeds quantitatively under the conditions where absolute methylal which is free of alcohol is used as a solvent and. . . is considered as a cancer-causing substance; and the like. In addition, this article describes that a yield of an ethyl **bromozincacetate** derivative is low when it is prepared in tetrahydrofuran.

SUMM . . . of diethyl ether which is industrially disadvantageous, and a step for adding methylmagnesium iodide to a mixture of bromoacetate and **zinc** and heating it. However, since such a process probably causes bumping, scaling-up is very difficult. In many other reports other than relatively recent ones, **Reformatsky** reagents are prepared by using methylal or diethyl ether under the similar conditions.

SUMM [0041] Then, the present inventors tried to prepare ethyl **bromozincacetate** according to the procedures described in the above references by using tetrahydrofuran which is common in preparing Grignard reagents. However, ethyl **bromozincacetate** could not be reproducibly prepared because the reaction did not initiate or initiated steeply, or yielding was extremely low. Low. . .

SUMM [0042] It is generally reported that good preparation results are

obtained by cleaning **zinc** prior to a **Reformatsky** reaction or a synthesis of a **Reformatsky** reagent. In the present inventor's work, industrial preferable reproducibility could not be obtained even when **zinc** was cleaned.

SUMM [0043] From the above results, it is recognized that a reproducible and industrially advantageous process for producing a **Reformatsky** reagent is required and the resulting **Reformatsky** reagent is required to have stability sufficient to stand practical use.

SUMM [0044] In this context, Encyclopedia of Reagents for Organic Synthesis, 1995, 2402 describes that ethyl **bromozincacetate** presented for a few days in diethyl ether at low temperatures.

SUMM [0045] Tetrahedron Lett., 1982, 3945 and Tetrahedron, 1984, 2787 report that tert-butyl **bromozincacetate** could be isolated as a crystal, but ethyl **bromozincacetate** could not be crystallized.

SUMM [0046] In addition, J. Chem. Soc., Chem. Commun., 1983, 553 and Organometallics, 1984, 3, 1403 report that a tert-butyl **bromozincacetate**-THF binuclear complex (BrZnCH.sub.2COOtBu.THF).sub.2 could be isolated as a crystal, but ethyl **bromozincacetate** could not be crystallized.

SUMM [0047] In this context, since reaction products obtained from ethyl **bromozincacetate** and carbonyl compounds and the like are different from those obtained from tert-butyl **bromozincacetate** in steric hindrance and stability, it is understood that they may exhibit different reactivities each other in the subsequent derivation.

. .

SUMM [0104] (27) A crystal of ethyl **bromozincacetate** to which tetrahydrofuran (THF) coordinates;

SUMM [0109] wherein the bond length of Br(1)-**Zn**(2) is 2.334 Å, the bond length of **Zn**(2)-C(3) is 1.996 Å, the bond length of **Zn**(2)-O(5) is 2.029 Å, the bond length of **Zn** (2)-O(9) is 2.049 Å, the bond length of C(3)-C(4) is 1.21 Å, the bond length of C(4)-O(5) is 1.47 Å, the. . . length of C(11)-C(12) is 1.37 Å, and the bond length of C(12)-C(13) is 1.42 Å; and the bond angle of Br(1)-**Zn**(2)-C(3) is 112.4°, the bond angle of Br(1)-**Zn**(2)-O(5) is 122.5°, the bond angle of Br(1)-**Zn**(2)-O(9) is 105.0°, the bond angle of C(3)-**Zn**(2)-O(5) is 109.9°, the bond angle of C(3)-**Zn**(2)-O(9) is 91.3°, the bond angle of O(5)-**Zn**(2)-O(9) is 111.2°, the bond angle of **Zn**(2)-C(3)-C(4) is 129.6°, the bond angle of C(3)-C(4)-O(5) is 125°, the bond angle of C(3)-C(4)-O(6) is 120.6°, the bond angle of O(5)-C(4)-O(6) is 113°, the bond angle of **Zn** (2)-O(5)-C(4) is 108.1°, the bond angle of C(4)-O(6)-C(7) is 116°, the bond angle of O(6)-C(7)-C(8) is 111°, the bond angle of **Zn**(2)-O(9)-C(10) is 122.6°, the bond angle of **Zn**(2)-O(9)-C(13) is 122.8°, the bond angle of C(10)-O(9)-C(13) is 109.7°, the bond angle of O(9)-C(10)-C(11) is 104°, the bond angle of. . .

SUMM . . . The process according to (32), which comprises reacting the compound represented by a formula BrCH.sub.2COOC.sub.2H.sub.5 and an excess amount of **zinc** relative to the compound represented by a formula BrCH.sub.2COOC.sub.2H.sub.5 in a solvent selected from a group consisting of 2-methyltetrahydrofuran, 1,2-dimethoxyethane. . .

SUMM [0119] wherein X.sup.1, R.sup.10, R.sup.11 and R.sup.12 are the same as defined above with **zinc** in a solvent selected from a group consisting of 2-methyltetrahydrofuran, 1,2-dimethoxyethane, cyclopentyl methyl ether and tetrahydrofuran, or in a mixed solvent in any combination of two or more of them in the presence of an activating agent, wherein **zinc** exists in an excess amount relative to the

compound represented by the general formula (IV);

SUMM [0120] (38) The process according to (37), wherein **zinc** exists in an amount more than 1 gram atom and 50 gram atoms or less relative to one mole amount. . .

SUMM [0131] (46) A solution of ethyl **bromozincacetate** in 1,2-dimethoxyethane or cyclopentyl methyl ether;

SUMM . . . (48) Use of a crystal of the compound according to (27) in a step of producing a compound by a **Reformatsky** reaction, and the like.

DRWD [0137] FIG. 1 illustrates an X-ray crystal structure for a crystal of a **Reformatsky** reagent according to the present invention ((BrZnCH.sub.2COOC.sub.2H.sub.5.THF).sub.2).

DETD . . . hydride complex such as sodium borohydride, lithium borohydride, potassium borohydride, sodium cyanoborohydride, lithium tri(sec-butyl)borohydride, sodium tri(sec-butyl)borohydride and the like; and **zinc** borohydride and others. Preferably an alkali metal hydride complex such as sodium borohydride, lithium borohydride, potassium borohydride and the like;. . .

DETD . . . magnesium chloride, magnesium bromide; calcium halides such as calcium chloride, calcium bromide and the like; and boron fluoride, iron chloride, **zinc** chloride, antimony chloride and the like. Preferably, calcium halides such as calcium chloride and calcium bromide and the like; and. . .

DETD . . . In addition, the present inventors have made every effort to study possibility on an industrially advantageous process for producing a **Reformatsky** reagent, wherein the process being excellent in reproducibility, and have succeeded in producing a solution of ethyl **bromozincacetate** in tetrahydrofuran (THF) at a high reproducibility by using an excess amount of **zinc** relative to ethyl bromoacetate in THF to accomplish the present invention. According to the present process for producing a **Reformatsky** reagent, a **Reformatsky** reagent can be produced at high reproducibility with no steep initiation of reaction and no extreme reduction in yielding.

DETD [0201] In addition, it has been found that the solution of ethyl **bromozincacetate** in THF is surprisingly very stable, and that specifically, when the solution is maintained at 0-5° C., the solution can. . .

DETD [0202] Further, the present inventors have first succeeded in crystallizing ethyl **bromozincacetate** from a THF solution of ethyl **bromozincacetate**, and have revealed from an X-ray crystallography of the isolated crystal that this crystal has a structure of ethyl **bromozincacetate**.THF binuclear, complex ((BrZnCH.sub.2COOC.sub.2H.sub.5.THF).sub.2).

DETD [0203] Use of the ethyl **bromozincacetate**.THF binuclear complex in this crystal form allows obtaining a derivative of β-hydroxy acid of interest at a high yield even in a **Reformatsky** reaction wherein the derivative is obtained at a low yield by a conventional process. Thus, the **Reformatsky** reagent in the crystal form obtained according to the present invention is very useful.

DETD [0204] In addition, it has been found that the **Reformatsky** reagent in this crystal form is also very stable, and specifically, when this crystal is maintained under an inert gas. . .

DETD [0205] Although it has been found that the THF solution of ethyl **bromozincacetate** could be prepared reproducibly and the solution was stable as mentioned above, there remains a possibility to occur unexpectedly crystallization of ethyl **bromozincacetate** in some combinations between a temperature and a concentration in use or storage.

DETD [0207] Therefore, the present inventors further studied on obtaining a stable solution of ethyl **bromozincacetate** in which

crystallization does not occur at a relatively high concentration in order to minimize the above risk in an. . .

DETD . . . glycol ethers to a solution of the Grignard reagent in THF. According to this process, the present inventors prepared ethyl **bromozincacetate** in THF, and then 1,2-dimethoxyethane (DME) was added to this THF solution but crystallization could not be prevented.

DETD [0209] The present inventors have succeeded in preventing crystallization from a solution of **Reformatsky** reagent at a relatively high concentration by using DME or cyclopentyl methyl ether (CPME) in place of THF as a solvent in a production of a **Reformatsky** reagent. It may be mainly because under these conditions a crystalline ethyl **bromozincacetate**.THF complex is not formed due to the absence of THF in a system, and because crystallization of ethyl **bromozincacetate** itself and a complex thereof with DME or CPME is difficult under the above condition.

DETD [0210] It has been found that the resulting solution of a **Reformatsky** reagent in CPME is very stable without causing crystallization at higher concentrations than that of the above stable THF solution,. . .

DETD [0211] Further, the present inventors have succeeded in crystallizing and isolating a **Reformatsky** reagent.THF binuclear complex from these solutions by adding THF to the aforementioned DME solution and CPME solution.

DETD [0212] Thus, according to the present invention, a very stable **Reformatsky** reagent can be provided in a form of a crystal and a solution.

DETD . . . compound (a-3) is obtained by reacting the compound (a-5) with a lithium salt (Y.sup.3; a hydrogen atom) or an organic **zinc** compound (Y.sup.3; a halogen atom) prepared from the compound (a-4).

DETD [0248] When the compound (a-3) is obtained by reacting the compound (a-5) with an organic **zinc** compound (a **Reformatsky** reagent) in this reaction, the reaction temperature is generally -80.about.150° C., and preferably -40.about.20° C. The reaction time is generally 5 minutes to 20 hours, and preferably 30 minutes to 5 hours. The amount of the organic **zinc** compound used in this reaction is 1.about.10 equivalents, and preferably 1.2.about.5 equivalents relative to the amount of the material compound. . .

DETD [0249] In preparation of a **Reformatsky** reagent, **zinc** is used in a form of, for example, powder, flake, wire, and foil, and particularly **zinc** is preferably used in a form of powder. It is preferable that **zinc** is treated by a conventional acid cleaning before use, but commercial **zinc** is used without any treatment. It is preferable that excess amount of **zinc** is used relative to one mole amount of the sub material compound (a-4) in preparation of a **Reformatsky** reagent. Specifically, it is preferable that **zinc** exists in an amount more than 1 gram atom, more preferably more than 1 gram atom and 50 gram atoms. . . and 3 gram atoms or less. It is better that the water content in a solvent used in preparing a **Reformatsky** reagent is less, and it is particularly preferable that the content is 0.005% or less. Optionally, a stabilizer (2,6-di-t-butyl-4-methyl-phenol and the like) may be added to tetrahydrofuran. It is preferable that **zinc** is activated. An activating agent used in the present invention includes, for example, iodine, 1,2-dibromoethane, copper halide, silver halide, chlorotrimethylsilane, molecular sieves and the like, and particularly chlorotrimethylsilane is preferable. **Zinc**-Copper couple, Rieke **Zn**, **Zinc**-Silver-Graphite, **zinc** chloride-lithium, **zinc** chloride-lithium naphthalide, **zinc** and **zinc** compounds activated with super sonic and

the like. The reaction temperature in preparation of a **Reformatsky** reagent is generally -80.about.150° C., and preferably -10.about.40° C. The reaction time is generally 1 minute to 20 hours, and. . .

DETD [0250] Optically active compounds may be obtained by reacting the compound (a-5) with an organic **zinc** compound in the presence of an appropriate asymmetric ligand. The asymmetric ligand includes, for example, an optical active amino alcohol. . .

DETD . . . for example, alkali metal hydride complexes such as sodium borohydride, lithium borohydride, potassium borohydride, sodium cyanoborohydride and the like; and **zinc** borohydride and others. Preferably, alkali metal hydride complexes such as sodium borohydride, lithium borohydride, potassium borohydride and the like are. . .

DETD . . . such as magnesium chloride, magnesium bromide and the like; calcium halides such as calcium chloride, calcium bromide and the like; **zinc** halides such as **zinc** chloride, **zinc** bromide and the like; iron chloride; tin chloride; boron fluoride and the like. Preferably, calcium halides such as calcium chloride, calcium bromide and the like; **zinc** halides such as **zinc** chloride, **zinc** bromide and the like are used, and more preferably calcium halides such as calcium chloride, calcium bromide and the like,. . .

DETD [0272] In addition, the present invention provides a crystal of ethyl **bromozincacetate** which is known to be a **Reformatsky** reagent. Particularly, the present invention provides a crystal of ethyl **bromozincacetate** to which tetrahydrofuran (THF) coordinates, and more specifically, the present invention provides a compound represented by a formula (BrZnCH.sub.2COOC.sub.2H.sub.5.THF).sub.2.

DETD [0273] The present crystal of ethyl **bromozincacetate** to which THF coordinates has peaks at 2983, 2897, 1589, 1446, 1371, 1286, 1070, 1022, 858 and 769 (cm.sup.-1) by. . .

DETD [0274] The present crystal of ethyl **bromozincacetate** to which THF coordinates has a structure determined by an X-ray crystallography shown in FIG. 1, wherein the structure having. . .

DETD . . . a formula (BrZnCH.sub.2COOC.sub.2H.sub.5.THF).sub.2 may be formed by reacting the compound represented by a formula BrCH.sub.2COOC.sub.2H.sub.5 with an excess amount of **zinc** relative to the compound represented by a formula BrCH.sub.2COOC.sub.2H.sub.5 in the presence of an activating agent in an organic solvent. . .

DETD [0284] wherein X.sup.1, R.sup.10, R.sup.11 and R.sup.12 are the same as defined above with **zinc** in a solvent selected from a group consisting of 2-methyltetrahydrofuran, 1,2-dimethoxyethane, cyclopentyl methyl ether and tetrahydrofuran, or in a mixed solvent in any combination of two or more of them in the presence of an activating agent, wherein **zinc** exists in an excess amount relative to the compound represented by the general formula (IV).

DETD [0296] The aforementioned substituents are not particularly limited as far as not decomposing the **Reformatsky** reagent, and include, for example, a halogen atom (e.g., fluorine, chlorine, bromine, iodine and the like); C.sub.1.about.6 alkoxy which may. . .

DETD [0297] The above described process is characterized in that **zinc** exists in an excess amount relative to the compound represented by the general formula (IV). In the above process, **zinc** is used in a form of, for example, powder, flake, wire, and foil, and particularly **zinc** is preferably used in a form of powder. In the above process, it is preferable that excess amount of **zinc** is used relative to one mole amount of the compound represented by the general formula (IV). Specifically, it is preferable that **zinc** exists

in an amount more than 1 gram atom, more preferably more than 1 gram atom and 50 gram atoms. . . . or less, and most preferably more than 1 gram atom and 3 gram atoms or less. It is preferable that **zinc** is cleaned with an acid or a base before use, but commercial **zinc** is used without any treatment when the content of the **zinc** is more than about 95%. Particularly, when commercial **zinc** is used, it is preferable to use for example chlorotrimethylsilane and the like as an activating agent.

DETD [0298] In particular, the present invention provides a process for producing a **bromozincacetate** compound wherein R.sup.11 and R.sup.12 are hydrogen atoms, and X.sup.1 is a bromine atom in the formulas (IV) and (V), and more preferably ethyl **bromozincacetate** wherein R.sup.11 and R.sup.12 are hydrogen atoms, X.sup.1 is a bromine atom, and R.sup.10 is an ethyl group in the. . .

DETD [0300] It is better that the water content in a solvent used in preparing a **Reformatsky** reagent is less, and it is particularly preferable that the content is 0.005% or less. Optionally, a stabilizer (2,6-di-t-butyl-4-methyl-phenol and. . .

DETD [0301] To a mixture of **zinc** and tetrahydrofuran is added chlorotrimethylsilane and the like in order to activate **zinc**, and then ethyl bromoacetate (or a solution of tetrahydrofuran) is added dropwise. By controlling a dropping speed of ethyl bromoacetate,. . . of the resulting mixture or a solution obtained by removing with filtration of insoluble materials may be used in a **Reformatsky** reaction. Alternatively, the resulting mixture itself may be used in the reaction according to the situation. In a similar way,. . .

DETD [0302] According to the present invention, when the compound represented by the general formula (IV) is reacted with **zinc**, an activating agent activating **zinc** is required. The activating agent which may be used in the present invention includes, for example, halogen, copper halide, silver. . .

DETD . . . which may have a substituent in 1,2-dimethoxyethane or cyclopentyl methyl ether. Particularly, the present invention provides a solution of ethyl **bromozincacetate** in 1,2-dimethoxyethan or cyclopentyl methyl ether.

DETD [0306] Still further, the present invention provides a process for stabilizing ethyl **bromozincacetate** by using 1,2-dimethoxyethane or cyclopentyl methyl ether. That is, use of 1,2-dimethoxyethane or cyclopentyl methyl ether as a solvent prevents. . .

DETD . . . atmosphere, 10 liters of THF and 253 mL (2 mol) of chlorotrimethylsilane were added to 2616 g (40 mol) of **zinc** powders. The mixture was stirred at 25° C. for 30 minutes. A solution of 2212 mL (20 mol) of ethyl. . . 25.about.35° C. 21.2 g (72 mmol, 1.25 eq) of (+)-cinchonine was added to 431 mL (0.23 mol) of the above **Reformatsky** reagent at 0.about.5° C. 18.6 mL (230 mmol, 4 eq) of pyridine was added dropwise at 0.about.5° C. over 7. . .

DETD . . . atmosphere, 8 mL of THF and 0.15 mL (1.18 mmol) of chlorotrimethylsilane were added to 1.04 g (16 mmol) of **zinc** powders, and the mixture was stirred at 35.about.40° C. for 5 hours. A solution of 2.36 mL (16 mmol) of. . . to 25° C. 8.5 mL of THF was added to 1.32 g (4.5 mmol, 1.25 eq) of (+)-cinchonine. The above **Reformatsky** reagent was added dropwise at 4.about.6° C. for 15 minutes. 1.16 mL (14.4 mmol, 4 eq) of pyridine was added. . .

DETD [0338] 50 mL of 0.1N hydrochloric acid was added to 5 g of **zinc** powders, the mixture was stirred vigorously for 10 minutes, filtered, and washed successively with 30 mL of water, 30 mL of ethanol, and 30 mL

of ether. **Zinc** was filtered, followed by vacuum drying at 100° C. for 8 hours. Under argon atmosphere, 4 mL of THF and 0.075 mL (0.59 mmol) of chlorotrimethylsilane were added to 0.52 g (8 mmol) of the **zinc** powders. The mixture was stirred at 25.about.28° C. for 2 minutes, and a solution of 1.04 mL (8 mmol) of. . .

DETD [0340] 3 mL of THF and 0.17 g (1.25 mmol, 8 eq) of **zinc** chloride were added to 0.095 g (2.51 mmol, 8 eq) of sodium borohydride. The mixture was stirred at 25° C.. . .

DETD [0342] 8 mL of THF and 0.15 mL (1.18 mmol) of chlorotrimethylsilane were added to 1.04 g (16 mmol) of **zinc** powders, and the mixture was stirred at 35.about.40° C. for 5 minutes. A solution of 2.36 mL (16 mmol) of. . . to 25° C. 8.5 mL of THF was added to 1.32 g (4.5 mmol, 1.25 eq) of (+)-cinchonine. The above **Reformatsky** reagent was added dropwise at 4.about.6° C. over 15 minutes. 1.16 mL (14.4 mmol, 4 eq) of pyridine was added. . .

DETD . . . THF was added to 0.47 g (12.5 mmol, 8 eq) of sodium borohydride. 0.85 g (6.27 mmol, 4 eq) of **zinc** chloride was added at 30° C., and the mixture was stirred at 35.about.37° C. for 15 minutes. 1 g (1.57. . .

DETD . . . mL (76.5 mmol) of ethyl bromoacetate in 35 mL of THF was added to a solution of 5 g of Rieke-**Zn** in 105 mL of THF at 19.about.21° C. over 20 minutes. The mixture was stirred at 20.about.25° C. for 20. . . hours and 30 minutes. 1.26 g (4.3 mmol, 1.25 eq) of (+)-cinchonine was added to 30 mL of the above **Reformatsky** reagent at 8° C. 1.1 mL (13.8 mmol, 4 eq) of pyridine was added dropwise at 5.about.7° C. The mixture. . .

DETD [0351] Further, a **Reformatsky** reagent in a stable form useful for a **Reformatsky** reaction which is used in STEP 04 of synthesizing a steroid C.sub.17,20 lyase inhibitor of the present invention was synthesized.

DETD Preparation of ethyl **bromozincacetate**.THF binuclear complex crystal((BrZnCH.sub.2COOEt.THF).sub.2)

DETD . . . 200 mL of THF and 5 mL (39.4 mmol) of chlorotrimethylsilane were added to 52.3 g (0.8 gram atoms) of **zinc** powders, and the mixture was stirred at 20.about.25° C. for 30 minutes. A solution of 44.4 mL (0.4 mol) of. . .

DETD [0353] After cooling, **zinc** was removed by filtration under nitrogen atmosphere, followed by washing with 150 mL of THF. The filtrate was concentrated to. . . 20 mL of THF, nitrogen was supplied to completion of removal of a liquid to obtain 88.9 g of ethyl **bromozincacetate** THF binuclear complex crystals ((BrZnCH.sub.2COOEt.THF).sub.2) (white crystals, yield 73%).

DETD X-ray crystallographic structural analysis of ethyl **bromozincacetate**.THF binuclear complex crystal ((BrZnCH.sub.2COOEt.THF).sub.2)

DETD [0361] A structure of the resulting ethyl **bromozincacetate**.THF binuclear complex crystal ((BrZnCH.sub.2COOEt.THF).sub.2) was analyzed by X-ray crystallography. This confirmed that this crystal has a structure shown in FIG.. . . 2, and crystallographic data and precise structural data are shown in Table 3.

TABLE 1

Bond Lengths for Crystal of Ethyl **Bromozincacetate**.THF Binuclear Complex ((BrZnCH.sub.2COOEt.THF).sub.2)

BOND LENGTH	(Å)	BOND LENGTH	(Å)
Br(1)--**Zn**(2)	2.334	**Zn**(2)--C(3)	1.996

Zn(2)--O(5)	2.029	**Zn**(2)--O(9)	2.049
C(3)--C(4)	1.21	C(4)--O(5)	1.47
C(4)--O(6)	1.33	O(6)--C(7)	1.46
C(7)--C(8)	1.41	O(9)--C(10)	1.42
C(9)--C(13)	1.42	C(10)--C(11)	1.49
C(11)--C(12)	1.37	C(12)--C(13). . .	

DETD [0362]
TABLE 2

Bond Angles for Crystal of Ethyl **Bromozincacetate**.THF Binuclear Complex ((BrZnCH.sub.2COOEt.THF).sub.2)

BOND ANGLE	(°)	BOND ANGLE	(°)
Br(1)--**Zn**(2)--C(3)	112.4	Br(1)--**Zn**(2)--O(5)	122.5
Br(1)--**Zn**(2)--O(9)	105.0	C(3)--**Zn**(2)--O(5)	109.9
C(3)--**Zn**(2)--O(9)	91.3	O(5)--**Zn**(2)--O(9)	111.2
Zn(2)--C(3)--C(4)	129.6	C(3)--C(4)--O(5)	125
C(3)--C(4)--O(6)	120.6	O(5)--C(4)--O(6)	113
Zn(2)--O(5)--C(4)	108.1	C(4)--O(6)--C(7)	116
O(6)--C(7)--C(8)	111	**Zn**(2)--O(9)--C(10)	122.6
Zn(2)--O(9)--C(13)	122.8	C(10)--O(9)--C(13)	109.7
O(9)--C(10)--C(11)	104	C(10)--C(11)--C(12)	108
C(11)--C(12)--C(13)	109	O(9)--C(13)--C(12)	106

DETD Preparation of ethyl **bromozincacetate**.THF binuclear complex crystal ((BrZnCH.sub.2COOEt.THF).sub.2)

DETD . . . of cyclopentyl methyl ether and 5.1 mL (40 mmol) of chlorotrimethylsilane were added to 52.3 g (0.8 gram atoms) of **zinc** powders, and the mixture was stirred at 20.about.25° C. for 20 minutes. A solution of 42.2 mL (0.4 mol) of. . .

DETD [0365] After cooling, **zinc** was removed by filtration under nitrogen atmosphere. 65 mL (0.80 mmol) of THF was added dropwise to the filtrate at. . . of cyclopentyl methyl ether, nitrogen was supplied until completion of removal of a liquid, to obtain 113 g of ethyl **bromozincacetate**.THF binuclear complex crystal ((BrZnCH.sub.2COOEt.THF).sub.2) (white crystals, yield corrected based on contained solvent 75.0%.

DETD Preparation of Solution of Ethyl **Bromozincacetate** in Tetrahydrofuran

DETD . . . 10 L of THF and 253 mL (2 mol) of chlorotrimethylsilane were added to 2616 g (40 gram atoms) of **zinc** powders. The mixture was stirred at 25° C. for 30 minutes. A solution of 2212 mL (20 mol) of ethyl. . . solution was allowed to cool to 25° C., to obtain 37 L of an about 0.535 M solution of ethyl **bromozincacetate** in tetrahydrofuran.

DETD . . . 21.2 g (72 mmol, 1.25 equivalent) of (+)-cinchonine was added to 431 mL (0.23 mol) of the solution of ethyl **bromozincacetate** in tetrahydrofuran obtained in Example 43 at 0.about.5° C. 18.6 mL (230 mmol, 4 equivalent) of pyridine was added dropwise. . .

DETD . . . (1.25 mmol, 1.25 equivalent) of hydrocinchonine was added to 4.7 mL (2.5 mmol, 2.5 equivalent) of the solution of ethyl **bromozincacetate** in tetrahydrofuran obtained in Example 43 at 4.about.5° C. 0.32 mL (4 mmol, 4 equivalents) of pyridine was added dropwise. . .

DETD [0452] Further, 1.9 mL (1 mmol, 1 equivalent) of the solution of ethyl **bromozincacetate** in tetrahydrofuran obtained in Example 43 was

added dropwise at -40.about.-35° C. The mixture was stirred at -40.about.-38° C.. for. . .

DETD [0455] Under argon atmosphere, 5.6 mL (2.96 mmol, 1 equivalent) of the solution of ethyl **bromozincacetate** in tetrahydrofuran obtained in Example 43 was added dropwise to a solution of 1 g (2.96 mmol) of 1-trityl-1H-imidazol-4-carbaldehyde in. . . at 0.about.5° C. for 1 hour and 25 minutes. 5.6 mL (2.96 mmol, 1 equivalent) of the solution of ethyl **bromozincacetate** in tetrahydrofuran obtained in Example 43 was added dropwise at 0.about.3° C. The mixture was stirred at 2.about.3° C. for. . .

DETD [0458] Under argon atmosphere, 3.2 mL (1.70 mmol, 2 equivalents) of the solution of ethyl **bromozincacetate** in tetrahydrofuran obtained in Example 43 was added dropwise to a solution of 0.3 g. (0.85 mmol) of 5-methyl-1-trityl-1H-imidazol-4-carbaldehyde in. . .

DETD [0461] Under argon atmosphere, 7.5 mL (4.01 mmol, 2 equivalents) of the solution of ethyl **bromozincacetate** in terahydrofuran obtained in Example 43 was added dropwise to a solution of 0.5 g (2.01 mmol) of 3,5-di-tert-butyl-2-methoxybenzaldehyde in. . .

DETD [0464] Under argon atmosphere, 30.9 mL (16.5 mmol, 2 equivalent) of the solution of ethyl **bromozincacetate** in tetrahydrofuran obtained in Example 43 was added dropwise to a solution of 1 g (8.25 mmol) of 2-methylpyridinecarboxyaldehyde in. . .

DETD [0467] Under argon atmosphere, 20 mL (10.7 mmol, 2 equivalents) of the solution of ethyl **bromozincacetate** in tetrahydrofuran obtained in Example 43 was added dropwise to a solution of 0.75 mL (5.35 mmol) of trifluoroacetophenone in. . .

DETD [0470] Under argon atmosphere, 20 mL (10.7 mmol, 2 equivalent) of the solution of ethyl **bromozincacetate** in tetrahydrofuran obtained in Example 43 was added dropwise to a solution of 0.74 mL (5.35 mmol) of o-methoxyacetophenone in. . .

DETD [0473] Under argon atmosphere,. 20 mL (10.7 mmol, 2 equivalents) of the solution of ethyl **bromozincacetate** in tetrahydrofuran obtained in Example 43 was added dropwise to a solution of 0.65 mL (5.35 mmol) of o-methoxybenzaldehyde in. . .

DETD [0476] Under argon atmosphere, 39 mL (21 mmol, 2 equivalent) of the solution of ethyl **bromozincacetate** in tetrahydrofuran obtained in Example 43 was added dropwise to a solution of 1 mL (10.5 mmol) of 2-pyridinecarboxyaldehyde in. . .

DETD [0479] Under argon atmosphere, 23.8 mL (12.7 mmol, 2 equivalent) of the solution of ethyl **bromozincacetate** in tetrahydrofuran obtained in Example 43 was added dropwise to a solution of 1 g (6.36 mmol) of 2-quinolinecarboxyaldehyde in. . .

DETD Preparation of Solution of Methyl **Bromozincacetate** in Tetrahydrofuran

DETD . . . 16 mL of THF and 0.24 mL (1.92 mmol) of chlorotrimethylsilane were added to 4.18 g (0.064 gram atoms) of **zinc** powders. The mixture was stirred at 26° C. for 30 minutes. A solution of 3.14 mL (32 mmol) of methyl. . . This was allowed to cool to 25° C., to obtain 59 mL of an about 0.530 M solution of methyl **bromozincacetate** in tetrahydrofuran.

DETD . . . 0.49 g (1.66 mmol, 1.25 equivalents) of (+)-cinchonine was added to 10 mL (5.4 mmol) of the solution of methyl **bromozincacetate** in tetrahydrofuran obtained in Example 55 at 5.about.8° C. 0.43 mL (5.32 mmol, 4 equivalents) of pyridine was added dropwise. . . C. The mixture, was stirred at -40.about.-35° C. for 1 hour. 2.5 mL (1.32 mmol) of the solution of methyl **bromozincacetate** in tetrahydrofuran obtained in Example 55 was added dropwise at -40° C., and the mixture was stirred at -40.about.-35° C.. . .

DETD Preparation of Solution of n-Propyl **Bromozincacetate** in

Tetrahydrofuran

DETD . . . 16 mL of THF and 0.24 mL (1.92 mmol) of chlorotrimethylsilane were added to 4.18 g (0.064 gram atoms) of **zinc** powders. The mixture was stirred at 23.about.25° C. for 30 minutes. A solution of 4.14 mL (32 mmol) of n-propyl. . . This was allowed to cool to 25° C., to obtain 60 mL of an about 0.530 M solution of n-propyl **bromozincacetate** in tetrahydrofuran.

DETD . . . (1.66 mmol, 1.25 equivalents) of (+)-cichonine was added to 6.2 mL (3.3 mmol, 2.5 equivalents) of the solution of n-propyl **bromozincacetate** in tetrahydrofuran obtained in Example 57 at 3.about.4° C. 0.43 mL (5.32 mmol, 4 equivalents) of pyridine was added dropwise. . . mL of THF was added dropwise at -41.about.-35° C. 2.5 mL (1.32 mmol, 1 equivalent) of the solution of n-propyl **bromozincacetate** in tetrahydrofuran obtained in Example 57 was added at -43.about.-36° C., and the mixture was stirred at -43.about.-37° C. for. . .

DETD Preparation of Solution of tert-Butyl **Bromozincacetate** in Tetrahydrofuran

DETD . . . 20 mL of THF and 0.5 mL (3.9 mmol) of chlorotrimethylsilane were added to 5.2 g (0.08 gram atoms) of **zinc** powders. The mixture was stirred at 23.about.25° C. for 20 minutes. A solution of 5.9 mL (0.04 mol) of tert-butyl. . . This was allowed to cool to 25° C., to obtain 76 mL of an about 0.52 M solution of tert-butyl **bromozincacetate** in tetrahydrofuran.

DETD [0491] Under argon atmosphere, 8.5 mL (4.43 mmol, 1.5 equivalents) of the solution of tert-butyl **bromozincacetate** in tetrahydrofuran obtained in Example 59 was added dropwise to a solution of 1 g (2.96 mmol) of 1-trityl-1H-imidazol-5-carbaldehyde in. . .

DETD Preparation of solution of 2-**bromozinc**-γ-butyrolactone in tetrahydrofuran

DETD . . . 40 mL of tetrahydrofuran and 1 mL (0.96 mmol) of chlorotrimethylsilane were added to 10.45 g (0.16 gram atoms) of **zinc** powders, and the mixture was stirred at 23.about.25° C. for 20 minutes. A solution of 7.4 mL (0.08 mol) of. . . minutes. This was allowed to cool to 25° C., to obtain 148 mL of an about 0.539 M solution of 2-**buromozinc**-γ-butyrolactone in tetrahydrofuran.

DETD [0495] Under argon atmosphere, 39.7 mL (4.43 mmol, 1.5 equivalents) of the solution of 2-**bromozinc**-γ-butyrolactone in tetrahydrofuran obtained in Example 61 was added dropwise to a solution of 1.25 mL (10.7 mmol) of acetophenone in. . .

DETD Preparation of Solution of (-)-Menthyl **Bromozincacetate** in Tetrahydrofuran

DETD . . . 20 mL of tetrahydrofuran and 0.5 mL (0.48 mmol) of chlorotrimethylsilane were added to 5.23 g (0.08 gram atoms) of **zinc** powders, and the mixture was stirred at 22° C. for 20 minutes. 50 mL of a solution of 11.09 g. . . This was allowed to cool to 25° C., to obtain 80 mL of an about 0.491 M solution of (-)-menthyl **bromozincacetate** in tetrahydrofuran.

DETD [0499] 20.4 mL (20 mmol, 2 equivalents) of the solution of (-)-menthyl **bromozincacetate** in tetrahydrofuran obtained in Example 63 was added dropwise to a solution of 0.58 mL (5 mmol) of acetophenone in. . .

DETD Preparation of Solution of Ethyl **Bromozincacetate** in Cyclopentyl Methyl Ether

DETD . . . of cyclopentyl methyl ether and 1.9 mL (15 mmol) of chlorotrimethylsilane were added to 19.6 g (0.3 gram atoms) of **zinc** powders, and the mixture was stirred for 20 minutes. A solution of 16.6 mL (0.15 mol) of ethyl bromoacetate in. . . minutes. This was allowed to cool 25° C., to obtain 150 mL of an about 1.0

M solution of ethyl **bromozincacetate** in cyclopentyl methyl ether.

DETD [0502] 75.0 mL (75.0 mmol) of the solution of ethyl **bromozincacetate** in cyclopentyl methyl ether obtained in Example 65 was added dropwise to 100 mL of THF at -15.about.-5° C. 11.0. . . . the mixture was stirred at the same temperature for 1 hour. 30.0 mL (30.0 mmol) of the solution of ethyl **bromozincacetate** in cyclopentyl methyl ether obtained in Example 65 was added dropwise at -15.about.-5° C. over 40 minutes, and the mixture. . .

DETD Preparation of Solution of Ethyl **Bromozincacetate** in 2-Methyltetrahydrofuran

DETD . . . 40 mL of 2-methyltetrahydrofuran and 1 mL (0.96 mmol) of chlorotrimethylsilane were added to 10.45 g (0.16 gram atoms) of **zinc** powders, and the mixture was stirred at 23.about.25° C. for 20 minutes. A solution of 8.85 mL (0.08 mol) of. . . This was allowed to cool to 25° C., to obtain 150 mL of an about 0.535 M solution of ethyl **bromozincacetate** in 2-methyltetrahydrofuran.

DETD [0505] Under argon atmosphere, 8.3 mL (4.43 mmol, 1.5 equivalent) of the solution of ethyl **bromozincacetate** in 2-methyltetrahydrofuran obtained in Example 67 was added dropwise to a solution of 1 g (2.96 mmol) of 1-trityl-1H-imidazol-4-carbaldehyde in. . .

DETD Preparation of Solution of Ethyl **Bromozincacetate** in DME

DETD . . . 30 mL of DME and 0.41 mL (3.20 mmol) of chlorotrimethylsilane were added to 4.18 g (0.064 gram atoms) of **zinc** powders, and the mixture was stirred for 20 minutes. A solution of 3.54 mL (32.0 mmol) of ethyl bromoacetate in. . . This was allowed to cool to 25° C., to obtain 60 mL of an about 0.533 M solution of ethyl **bromozincacetate** in DME.

DETD Asymmetric **Reformatsky** Reaction using Solution of Ethyl **Bromozincacetate** in DME

DETD [0508] Under argon atmosphere, 2.34 mL (1.25 mmol) of the solution of ethyl **bromozincacetate** in DME obtained in Example 69 was added dropwise to 2.0 mL of THF at 0.about.5° C. 184 mg (0.625. . . the mixture was stirred at the same temperature for 1 hour. 0.938 mL (0.500 mmol) of the solution of ethyl **bromozincacetate** in DME obtained in Example 69 was added dropwise at 0.about.5° C., the mixture was stirred at the same temperature. . .

DETD . . . 100 mL of THF and 2.5 mL (19.7 mmol) of chlorotrimethylsilane were added to 26.1 g (0.4 gram atoms) of **zinc** powders, and the mixture was stirred at 20.about.25° C. for 30 minutes. A solution of 22.2 mL (0.2 mol) of. . . The mixture was stirred at 20.about.35° C. for 1 hour, and allowed to cool to 25° C. Under nitrogen atmosphere, **zinc** was removed by filtration, followed by washing with 50 mL of THF. The filtrate was stirred at room temperature for. . . were filtered, press-filtered with nitrogen, and dried until completion of removal of a liquid, to obtain 35.3 g of ethyl **bromozincacetate.**THF binuclear complex crystals.

DETD . . . binuclear complex crystals((BrZnCH.sub.2COOEt.THF).sub.2), .sup.1H HMR measurements for the crystals were performed, and stability was assessed by a ratio of ethyl **bromozincacetate.**THF binuclear complex crystals and ethyl acetate produced by degradation (Table 4).

TABLE 4

Stability for Crystal of Ethyl **Bromozincacetate.**THF Binuclear Complex ((BrZnCH.sub.2COOEt.THF).sub.2)

Storing Temperature (° C.)	Storing Period (day)	((BrZnCH.sub.2COOEt.THF).sub.2/ Ethyl Acetate (%)

20.about.25	0	89
	30	73
0.about.5	0	89
	30	89
	60	87

. . .

DETD [0512] As seen from Table 4, when the ethyl **bromozincacetate** .THF binuclear complex crystals ((BrZnCH.sub.2COOEt.THF).sub.2) prepared by the present method are stored at 0.about.5° C. under inert gas atmosphere, remarkable degradation. . .

DETD Stability of Solution of Ethyl **Bromozincacetate** in Tetrahydrofuran

DETD . . . mL of tetrahydrofuran and 2.0 mL (16 mmol) of chlorotrimethyl silane were added to 20.9 g (0.33 gram atoms) of **zinc** powders, and the mixture was stirred at room temperature for 30 minutes. A solution of 17.7 mL (0.16 mol) of. . . This was allowed to cool to 25° C. to obtain 300 mL of an about 0.535 M solution of ethyl **bromozincacetate** in tetrahydrofuran.

DETD [0514] The resulting solution of ethyl **bromozincacetate** in tetrahydrofuran was stored in an inert gas in sealed state, reacted with N,N-diisopropyl-6-[(1-trityl-1H-imidazol-4-yl)carbonyl]-2-naphthamide, and a reaction rate into ethyl. . . (2.55 mmol) of N,N-diisopropyl-6-[(1-trityl-1H-imidazol-4-yl)carbonyl]-2-naphthamide was dissolved in 9 mL of THF, 5 mL (2.55 mmol) of a solution of ethyl **bromozincacetate** in tetrahydrofuran was added dropwise at -42° C., the mixture was stirred at -48.about.-42° C. until completion of the reaction,. . .

DETD [0515] Immediately after, and 30 days and 60 days after preparation of the solution of ethyl **bromozincacetate** in tetrahydrofuran, this reaction was performed.

DETD [0516] The solution of ethyl **bromozincacetate** in tetrahydrofuran was stored in the refrigerator at 0.about.5° C. and 20.about.25° C. under nitrogen atmosphere. ##STR82##

TABLE 5

Stability for Solution of Ethyl **Bromozincacetate** in Tetrahydrofuran

Storing Temperature (° C.)	Storing Period (day)	Reaction Rate (%)
20.about.25	0	83
	30	17
	60	0
0.about.5	0	83
	30	76
	60. .. .	

DETD [0522] As seen from Table 5, when the solution of ethyl **bromozincacetate** in THF prepared by the present method is stored at 0.about.5° C. under inert gas atmosphere, the solution exhibits a. . .

DETD Stability of Solution of Ethyl **Bromozincacetate** in Cyclopentyl Methyl Ether

DETD . . . of cyclopentyl methyl ether and 0.51 mL (4 mmol) of chlorotrimethylsilane were added to 5.23 g (0.08 gram atoms) of **zinc** powders, and the mixture was stirred for 20 minutes. A solution of 4.42 mL (35 mmol) of ethyl bromoacetate in. . . This was allowed to cool to 25° C., to obtain 80 mL of an about 0.5 M

solution of ethyl **bromozincacetate** in cyclopentyl methyl ether. The resulting solution of ethyl **bromozincacetate** in cyclopentyl methyl ether was stored in an inert gas in sealed state, reacted with N-methyl-6-[(1-trityl-1H-imidazol-4-yl)carbonyl]-2-naphthamide, and a reaction rate. . . (0.5 mmol) of N-methyl-6-[(1-trityl-1H-imidazol-4-yl)carbonyl]-2-naphthamide was dissolved in 5 mL of THF, 1 mL (0.5 mmol) of a solution of ethyl **bromozincacetate** in cylopentyl methyl ether was added dropwise at 0.about.5° C., the mixture was stirred at 20.about.25° C. for 1 hour. . .

DETD [0524] Immediately after, and 7 days and 30 days after preparation of the solution of ethyl **bromozincacetate** in cyclopentyl methyl ether, this reaction was performed. The solution of ethyl **bromozincacetate** in cyclopentyl methyl ether was stored in a refrigerator at 0.about.5° C. and 20.about.25° C. under nitrogen atmosphere. ##STR83##

TABLE 6

Stability for Solution of Ethyl **Bromozincacetate** in Cyclopentyl Methyl Ether

Storing Temperature (° C.)	Storing Period (day)	Reaction Rate (%)
20.about.25	0	94
	7	87
	30	18
0.about.5	0	94
	7. . .	

DETD [0530] As seen from Table 6, when the solution of ethyl **bromozincacetate** in cyclopentyl methyl ether prepared by the present method is stored at 0.about.5° C. under inert gas atmosphere, the solution. . .

DETD Stability of Solution of Ethyl **Bromozincacetate** in DME

DETD . . . 30 mL of DME and 0.41 mL (3.20 mmol) of chlorotrimethylsilane were added to 4.18 g (0.064 gram atoms) of **zinc** powders and the mixture was stirred for 20 minutes. A solution of 3.54 mL (32.0 mmol) of ethyl bromoacetate in. . . for 30 minutes. This was allowed to cool to 25° C., to obtain an about 0.533 M solution of ethyl **bromozincacetate** in DME. The solution of ethyl **bromozincacetate** in DME was stored in an inert gas in sealed state, reacted with N-methyl-6-[(1-trityl-1H-imidazol-4-yl)carbonyl]-2-naphthamide, and a reaction rate into ethyl. . . (0.5 mmol) of N-methyl-6-[(1-trityl-1H-imidazol-4-yl)carbonyl]-2-naphthamide was dissolved in 5 mL of THF, 0.938 mL (0.5 mmol) of a solution of ethyl **bromozincacetate** in DME was added dropwise at 0.about.5° C., the mixture was stirred at 20.about.25° C. for 1 hour, and stability. . .

DETD [0532] Immediately after, and 10 days and 30 days after preparation of the solution of ethyl **bromozincacetate** in DME, this reaction was performed.

DETD [0533] The solution of ethyl **bromozincacetate** in DME was stored in a refrigerator at 0.about.5° C. and 20.about.25° C. under nitrogen atmosphere. ##STR84##

TABLE 7

Stability for Solution of Ethyl **Bromozincacetate** in DME

Storing Temperature (° C.)	Storing Period (day)	Reaction Rate (%)
20.about.25	0	90
	10	55
	30	0
0.about.5	0	90
	10	84
	30. . .	

DETD [0539] As seen from Table 7, when the solution of ethyl **bromozincacetate** in DME prepared by the present method is stored at 0.about.5° C. under inert gas atmosphere, the solution exhibited a. . .

DETD Stability of solution of ethyl **bromozincacetate** in 2-methyltetrahydrofuran

DETD . . . 40 mL of 2-methyltetrahydrofuran and 1 mL (0.96 mmol) of chlorotrimethylsilane were added to 10.45 g (0.16 gram atoms) of **zinc** powders, and the mixture was stirred at 23 to 25° C. for 20 minutes. A solution of 8.85 mL (0.08. . . minutes. This was allowed to cool to 25° C., to obtain 150 mL of an about 0.5M solution of ethyl **bromozincacetate** in 2-methyltetrahydrofuran. The resulting solution of ethyl **bromozincacetate** in 2-methyltetrahydrofuran was stored in an inert gas in sealed state, reacted with 1-trityl-1H-imidazol-4-carbaldehyde, ethyl 3-hydroxy-3-(1-trityl-1H-imidazol-4-yl)propanoate was isolated, and a remaining amount of ethyl **bromozincacetate** was obtained. The procedure was as follows: 1 g (2.96 mmol) of 1-trityl-1H-imidazol-4-carbaldehyde was dissolved in 10 mL of THF, 8.3 mL (4.34 mmol) of a solution of ethyl **bromozincacetate** in 2-methyltetrahydrofuran was added dropwise at 0.about.5° C., and the mixture was stirred at 20.about.25° C. for 1 hour and. . .

DETD [0541] Immediately after, and 30 days after preparation of the solution of ethyl **bromozincacetate** in 2-methyltetrahydrofuran, this reaction was performed.

DETD [0542] The solution of ethyl **bromozincacetate** in 2-methyltetrahydrofuran was stored in a refrigerator at 0.about.5° C. under nitrogen atmosphere. ##STR85##

TABLE 8

Stability for Solution of Ethyl **Bromozincacetate** in 2-Methyltetrahydrofuran

Storing Temperature (° C.)	Storing Period (day)	Isolation Yield (%)
0.about.5	0	83
	30	80

DETD [0543] As seen from Table 8, when the solution of ethyl **bromozincacetate** in 2-methyltetrahydrofuran prepared by the present method is stored at 0.about.5° C. under inert gas atmosphere, the solution exhibited high. . .

DETD [0545] Further, the present invention can provide a **Reformatsky** reagent in a very stable form.

DETD [0546] That is, the present invention provides a crystal of a **Reformatsky** reagent coordinated with THF ((BrZnCH.sub.2COOC.sub.2H.sub.5.THF).sub.2). The **Reformatsky** reagent in this crystal form can be used as a reagent for at least 6 months without substantial manufacturing problem,. . .

DETD [0547] Also, the present invention provides a solution of a **Reformatsky** reagent. (BrZnCH.sub.2COOC.sub.2H.sub.5) in THF, 1,2-dimethoxyethane or cyclopentyl methyl ether. The **Reformatsky** reagent in this solution form can be used as a reagent for at least 1 month without substantial manufacturing problem, . . .

CLM What is claimed is:

22. A crystal of ethyl **bromozincacetate** to which tetrahydrofuran (THF) coordinates.

. . . compound according to claim 22, which has a structure determined by an X-ray crystallography: ##STR103## wherein the bond length of Br(1)-**Zn**(2) is 2.334 Å, the bond length of **Zn**(2)-C(3) is 1.996 Å, the bond length of **Zn**(2)-O(5) is 2.029 Å, the bond length of **Zn**(2)-O(9) is 2.049 Å, the bond length of C(3)-C(4) is 1.21 Å, the bond length of C(4)-O(5) is 1.47 Å, the. . . length of C(11)-C(12) is 1.37 Å, and the bond length of C(12)-C(13) is 1.42 Å; and the bond angle of Br(1)-**Zn**(2)-C(3) is 112.4°, the bond angle of Br(1)-**Zn**(2)-O(5) is 122.5°, the bond angle of Br(1)-**Zn**(2)-O(9) is 105.0°, the bond angle of C(3)-**Zn**(2)-O(5) is 109.9°, the bond angle of C(3)-**Zn**(2)-O(9) is 91.3°, the bond angle of O(5)-**Zn**(2)-O(9) is 111.2°, the bond angle of **Zn**(2)-C(3)-C(4) is 129.6°, the bond angle C(3)-C(4)-O(5) is 125°, the bond angle of C(3)-C(4)-O(6) is 120.6°, the bond angle of O(5)-C(4)-O(6) is 113°, the bond angle of **Zn**(2)-O(5)-C(4) is 108.1°, the bond angle of C(4)-O(6)-C(7) is 116°, the bond angle of O(6)-C(7)-C(8) is 111°, the bond angle of **Zn**(2)-O(9)-C(10) is 122.6°, the bond angle of **Zn**(2)-O(9)-C(13) is 122.8°, the bond angle of C(10)-O(9)-C(13) is 109.7°, the bond angle of O(9)-C(10)-C(11) is 104°, the bond angle of. . .

. . . process according to claim 26, which comprises reacting the compound represented by a formula BrCH2COOC2H5 and an excess amount of **zinc** relative to the compound represented by a formula BrCH2COOC2H5 in a solvent selected from a group consisting of 2-methyltetrahydrofuran, 1,2-dimethoxyethane. . .

. . . represented by the general formula (IV): ##STR105## wherein X1, R10, R11 and R12 are the same as defined above with **zinc** in a solvent selected from a group consisting of 2-methyltetrahydrofuran, 1,2-dimethoxyethane, cyclopentyl methyl ether and tetrahydrofuran, or in a mixed solvent in any combination of two or more of them in the presence of an activating agent, wherein **zinc** exists in an excess amount relative to the compound represented by the general formula (IV).

32. The process according to claim 31, wherein **zinc** exists in an amount more than 1 gram atom and 50 gram atoms or less relative to one mole amount. . .

40. A solution of ethyl **bromozincacetate** in 1,2-dimethoxyethane or cyclopentyl methyl ether.

. . . Use of a crystal of the compound according to claim 22 in a step of producing a compound by a **Reformatsky** reaction.

IT 337521-39-8P, N-Methyl-6-[(1-trityl-1H-imidazol-4-yl)carbonyl]-2-naphthalenecarboxamide 426219-35-4P, 6-Bromo-N-methyl-2-naphthalenecarboxamide 566200-77-9P, 6-[1,3-Dihydroxy-1-(1-trityl-1H-imidazol-4-yl)propyl]-N-methyl-2-naphthalenecarboxamide **566200-78-0P**, Ethyl (3S)-3-hydroxy-3-[6-[(methylamino)carbonyl]-2-

naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate 566200-79-1P, 6-[(1S)-1,3-Dihydroxy-1-(1-trityl-1H-imidazol-4-yl)propyl]-N-methyl-2-naphthalenecarboxamide **566200-80-4P**, Isopropyl (3S)-3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate **566200-92-8P 566200-93-9P** 566200-96-2P, 6-[Hydroxy(1-trityl-1H-imidazol-4-yl)methyl]-N-methyl-2-naphthalenecarboxamide **566200-97-3P**, Ethyl 3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate **566200-98-4P**, tert-Butyl (3S)-3-hydroxy-3-[6-[(methylamino)carbonyl]-2-naphthyl]-3-(1-trityl-1H-imidazol-4-yl)propanoate
(preparation of fused imidazole compound steroid lyase inhibitor by Reformatskii reaction using stable alkoxycarbonylmethylzinc bromide, reduction of β-hydroxy esters, and cyclization)

IT **426219-55-8P** 426219-56-9P, 6-[1,3-Dihydroxy-1-(1-trityl-1H-imidazol-4-yl)propyl]-N,N-diisopropyl-2-naphthalenecarboxamide
(preparation of fused imidazole compound steroid lyase inhibitor by Reformatskii reaction using stable alkoxycarbonylmethylzinc bromide, reduction of β-hydroxy esters, and cyclization)

L67 [redacted] on STN
ACCESSION NUMBER: 2004:44942 USPATFULL
TITLE: Novel imidazole derivatives, production method thereof and use thereof
INVENTOR(S): Tasaka, Akihiro, Suita-shi, JAPAN
Hitaka, Takenori, Takarazuka-shi, JAPAN
Matsunaga, Nobuyuki, Osaka-shi, JAPAN
Kusaka, Masami, Kobe-shi, JAPAN
Adachi, Mari, Kobe-shi, JAPAN
Oaki, Isao, Kawanishi-shi, JAPAN
Ojida, Akio, Fukuoka-shi, JAPAN

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2004033935	A1	20040219	
APPLICATION INFO.:	US 2003-416986	A1	20030516	(10)
	WO 2001-JP10002		20011116	

	NUMBER	DATE
[redacted]		20001117
	JP 2001-247618	20010817
	JP 2001-336880	20011101

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: TAKEDA PHARMACEUTICALS NORTH AMERICA, INC, INTELLECTUAL PROPERTY DEPARTMENT, 475 HALF DAY ROAD, SUITE 500, LINCOLNSHIRE, IL, 60069
NUMBER OF CLAIMS: 32
EXEMPLARY CLAIM: 1
LINE COUNT: 2561
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides a compound having a steroid C.sub.17,20-lyase-inhibitory activity and useful for the therapy and prophylaxis of tumor such as prostatism, breast cancer and the like, and a method for efficiently separating an optically active compound of this compound from a mixture of optical isomers thereof, a compound of the formula: ##STR1##

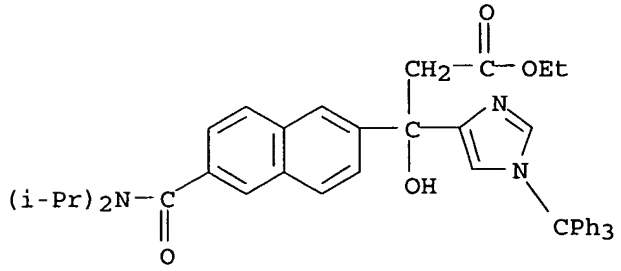
wherein each symbol is as defined in the specification, a salt thereof

or a prodrug thereof, and a method for obtaining an optically active compound by optically resolving a mixture of optical isomers by the use of a resolving agent such as tartranilic acid and the like.

IT **426219-55-8P 426219-58-1P**
(preparation of 7-aryldihydropyrrolo[1,2-c]imidazol-7-ols and analogs as steroid 17-20-lyase inhibitors)

RN 426219-55-8 USPATFULL

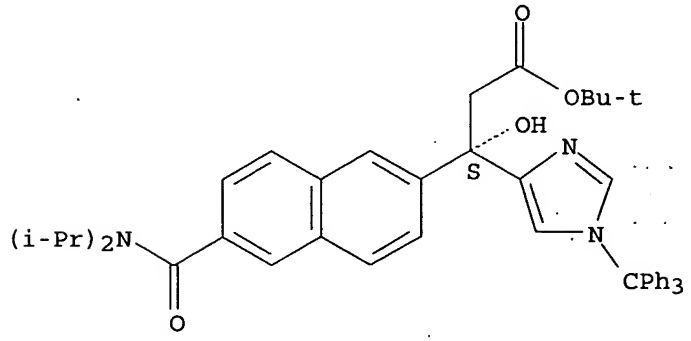
CN 1H-Imidazole-4-propanoic acid, β-[6-[[bis(1-methylethyl)amino]carbonyl]-2-naphthalenyl]-β-hydroxy-1-(triphenylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



RN 426219-58-1 USPATFULL

CN 1H-Imidazole-4-propanoic acid, β-[6-[[bis(1-methylethyl)amino]carbonyl]-2-naphthalenyl]-β-hydroxy-1-(triphenylmethyl)-, 1,1-dimethylethyl ester, (βS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



DETD . . . metal such as sodium, potassium and the like, alkaline earth metal such as calcium, magnesium etc., transition metal such as **zinc**, iron, copper etc., and the like), salts with organic base (e.g., organic amines such as trimethylamine, triethylamine, pyridine, picoline, ethanolamine,. . .

DETD [0180] In Step H, compound (VII) is reacted with lithium salt (VI) or organic **zinc** compound (XI) to give compound (VIII). When lithium salt (VI) is reacted, the reaction temperature is from -80° C. to 0° C., preferably from -60° C. to -40° C. When compound (VII) is reacted with organic **zinc** compound (XI: **Reformatsky** reagent) to give compound (VIII), the reaction temperature is from -80° C. to 40° C., preferably from -40° C. to 10° C. The **Reformatsky** reagent can be prepared by a method described in a publication (Alois

Furstner, Angew. Chem. Int. Ed. Engl. 1993, vol.. . .

DETD [0181] In step H, by reaction of compound (VII) and organic **zinc** compound (XI) in the presence of a suitable chiral ligand affords optically active compound (VIII'). As the chiral ligand, optically. . .

DETD [0439] **Zinc** powder (1.04 g) was suspended in dry THF (8 ml) and chlorotrimethylsilane (0.1 ml) was added at room temperature. The. . . min. The mixture was stirred at 60° C. for 20 min and allowed to cool to give a solution of **Reformatsky** reagent.

DETD [0440] Cinchonine (1.55 g) was suspended in dry THF (10 ml) and **Reformatsky** reagent (0.35 M; 48.2 ml) and pyridine (1.37 ml) were added dropwise under ice-cooling. The mixture was stirred under ice-cooling. . .

IT 10540-35-9P, 3-Bromo-4'-fluoro-1,1'-biphenyl 426219-35-4P 426219-36-5P 426219-37-6P 426219-38-7P 426219-39-8P 426219-40-1P, Ethyl 3-hydroxy-3-(1-trityl-1H-imidazol-4-yl)propanoate 426219-41-2P, 1-(1-Trityl-1H-imidazol-4-yl)-1,3-propanediol 426219-42-3P, 3-Hydroxy-1-(1-trityl-1H-imidazol-4-yl)-1-propanone 426219-43-4P, 5,6-Dihydro-7H-pyrrolo[1,2-c]imidazol-7-one 426219-44-5P 426219-45-6P, 3-Bromo-1-(1-trityl-1H-imidazol-4-yl)-1-propanone 426219-46-7P 426219-47-8P 426219-48-9P 426219-49-0P 426219-50-3P 426219-51-4P, 6,7-Dihydroimidazo[1,5-a]pyridin-8(5H)-one 426219-52-5P 426219-53-6P 426219-54-7P **426219-55-8P** 426219-56-9P 426219-57-0P **426219-58-1P**
(preparation of 7-aryldihydropyrrolo[1,2-c]imidazol-7-ols and analogs as steroid 17-20-lyase inhibitors)

L67 [redacted] on STN

ACCESSION NUMBER:	2001:44244 USPATFULL			
TITLE:	Endothelin antagonists			
INVENTOR(S):	Neya, Masahiro, Tsuchiura, Japan Zenkoh, Tatsuya, Toride, Japan Sawada, Hitoshi, Tsukuba, Japan Kasahara, Chiyoshi, Sanda, Japan Murata, Masayoshi, Osaka, Japan Hemmi, Keiji, late of Tsukuba, Japan deceased Hemmi, Mitsue, Tsukuba, Japan heir			
PATENT ASSIGNEE(S):	Fujisawa Pharmaceutical Co., Ltd., Osaka, Japan (non-U.S. corporation)			
	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6207686	B1	20010327	
	WO 9615109		19960523	
APPLICATION INFO.:	US 1997-836198		19970620	(8)
	WO 1995-JP2306		19951113	
			19970620	PCT 371 date
			19970620	PCT 102(e) date

	NUMBER	DATE
[redacted]	[redacted]	19941114
		19950517

DOCUMENT TYPE:	Utility
FILE SEGMENT:	Granted
PRIMARY EXAMINER:	O'Sullivan, Peter
LEGAL REPRESENTATIVE:	Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
NUMBER OF CLAIMS:	11
EXEMPLARY CLAIM:	1
LINE COUNT:	4739

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

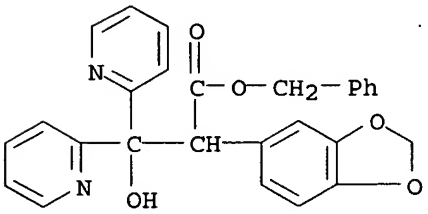
AB ##STR1##

A compound of formula (I), in which: R.sup.1 is lower alkyl, cyclo(lower)alkyl, optionally substituted aryl, optionally substituted heterocyclic group, cyclo(lower)alkyl(lower)alkyl, or ar(lower)alkyl; R.sup.2 is hydrogen, hydroxy or protected hydroxy; R.sup.3 is lower alkyl, aryl, ar(lower)alkyl or optionally substituted heterocyclic(lower)alkyl; R.sup.4 is carboxy, protected carboxy or lower alkylsufonylcarbamoyl; R.sup.5 is hydrogen or lower alkyl; R.sup.6 is hydrogen or heterocyclic group; A is a single bond or lower alkylene, and Ar is optionally substituted aryl, or pharmaceutically acceptable salts thereof, having endothelin antagonistic activity.

IT **179389-96-9P 179389-97-0P**
(preparation of acylamino acid analogs as endothelin antagonists)

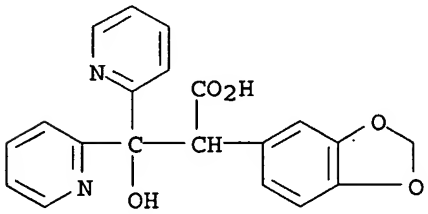
RN 179389-96-9 USPATFULL

CN 2-Pyridinepropanoic acid, α-1,3-benzodioxol-5-yl-β-hydroxy-β-2-pyridinyl-, phenylmethyl ester (9CI) (CA INDEX NAME)



RN 179389-97-0 USPATFULL

CN 2-Pyridinepropanoic acid, α-1,3-benzodioxol-5-yl-β-hydroxy-β-2-pyridinyl- (9CI) (CA INDEX NAME)



DETD Suitable reducing agents to be used in chemical reduction are a combination of metal [e.g. tin, **zinc**, iron, etc.] or metallic compound [e.g. chromium chloride, chromium acetate, etc.] and an organic or inorganic acid [e.g. formic acid,. . .

IT 6056-23-1P, Ethyl 2-methoxyphenylacetate 20349-89-7P 20883-98-1P
22047-88-7P 26664-86-8P, Ethyl 3,4-Methylenedioxyphenylacetate
40525-65-3P 53342-32-8P 55001-09-7P 56052-43-8P 56052-50-7P
76983-04-5P 105253-89-2P 163843-34-3P 179257-54-6P 179389-00-5P
179389-01-6P 179389-02-7P 179389-03-8P 179389-04-9P 179389-05-0P
179389-06-1P 179389-07-2P 179389-08-3P 179389-09-4P 179389-10-7P
179389-11-8P 179389-12-9P 179389-13-0P 179389-14-1P 179389-15-2P
179389-16-3P 179389-17-4P 179389-18-5P 179389-19-6P 179389-20-9P
179389-21-0P 179389-22-1P 179389-23-2P 179389-24-3P 179389-25-4P
179389-26-5P 179389-27-6P 179389-28-7P 179389-29-8P 179389-30-1P
179389-31-2P 179389-32-3P 179389-33-4P 179389-34-5P 179389-35-6P

179389-36-7P	179389-37-8P	179389-38-9P	179389-39-0P	179389-40-3P
179389-41-4P	179389-42-5P	179389-44-7P	179389-45-8P	179389-46-9P
179389-47-0P	179389-48-1P	179389-49-2P	179389-50-5P	179389-51-6P
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179389-57-2P	179389-58-3P	179389-59-4P	179389-60-7P	179389-61-8P
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179389-67-4P	179389-68-5P	179389-69-6P	179389-70-9P	179389-71-0P
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179389-87-8P	179389-88-9P	179389-89-0P	179389-90-3P	179389-91-4P
179389-92-5P	179389-93-6P	179389-94-7P	179389-95-8P	
179389-96-9P	**179389-97-0P**	179389-98-1P	179389-99-2P	
179390-00-2P	179390-01-3P	179390-02-4P	179390-03-5P	179390-04-6P
179390-05-7P	179390-06-8P	179390-07-9P	179390-08-0P	179390-09-1P
179390-10-4P	179390-11-5P	179390-12-6P	179390-13-7P	179390-14-8P
179390-15-9P	179390-16-0P	179390-17-1P	179390-18-2P	179390-19-3P
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179390-71-7P	179390-73-9P	179392-82-6P	179392-92-8P	179392-93-9P
179457-71-7P	179603-48-6P	179603-49-7P	179603-50-0P	

(preparation of acylamino acid analogs as endothelin antagonists)

[redacted]

L67 ANSWER 23 OF 27 USPATFULL on STN
ACCESSION NUMBER: 1998:122421 USPATFULL
TITLE: Naphthyridine derivatives and pharmaceutical compositions thereof
INVENTOR(S): Takayama, Kazuhisa, Ibaraki, Japan
Iwata, Masahiro, Ibaraki, Japan
Okamoto, Yoshinori, Ibaraki, Japan
Aoki, Motonori, Ibaraki, Japan
Niwa, Akira, Chiba, Japan
Isomura, Yasuo, Ibaraki, Japan
PATENT ASSIGNEE(S): Yamanouchi Pharmaceutical Co., Ltd., Tokyo, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5817670		19981006	
	WO 9606843		19960307	
APPLICATION INFO.:	US 1997-776295		19970130	(8)
	WO 1995-JP1700		19950828	
			19970130	PCT 371 date
			19970130	PCT 102(e) date

	NUMBER	DATE
[redacted]		19950207

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Dentz, Bernard
LEGAL REPRESENTATIVE: Burgess, Ryan & Wayne
NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
LINE COUNT: 2569

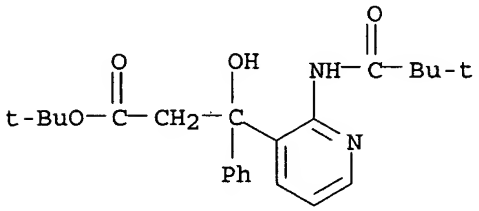
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB 1,8-Naphthyridine derivatives represented by the following general formula (I), salts thereof, hydrates thereof and solvates thereof. ##STR1## They have an activity to inhibit type IV phosphodiesterase and are useful as agents for the prevention and treatment of respiratory diseases, inflammatory diseases accompanying organ transplantation, systemic or local arthropathy, proliferative diseases, micturition-related diseases and diseases in which tumor necrosis factor (TNF) and other cytokine (IL-1, IL-6 or the like) are concerned.

IT **178548-92-0P**
(preparation of naphthyridine derivs. as type IV phosphodiesterase inhibitors)

RN 178548-92-0 USPATFULL

CN 3-Pyridinepropanoic acid, 2-[(2,2-dimethyl-1-oxopropyl)amino]-β-hydroxy-β-phenyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



SUMM . . . thereof in the presence of the equivalent molar ratio or excess amount of a metal such as iron powder, tin, **zinc** or the like, at a temperature of from cooling to room temperature or, as occasion demands, at a heating temperature.

DETD **Zinc** (4.4 g, 67 mmol) was added to a mixture of 1-methyl-4-(3-nitrophenyl)-1,8-naphthyridin-2(1H)-one (0.95 g, 3.4 mmol) obtained in Example 12, methanol. . .

IT 33760-71-3P 178548-59-9P 178548-60-2P 178548-61-3P 178548-62-4P
178548-63-5P 178548-64-6P 178548-65-7P 178548-66-8P 178548-67-9P
178548-68-0P 178548-69-1P 178548-70-4P 178548-71-5P 178548-72-6P
178548-73-7P 178548-74-8P 178548-75-9P 178548-76-0P 178548-77-1P
178548-78-2P 178548-79-3P 178548-80-6P 178548-81-7P 178548-82-8P
178548-83-9P 178548-84-0P 178548-85-1P 178548-86-2P 178548-87-3P
178548-88-4P 178548-89-5P 178548-90-8P 178548-91-9P
178548-92-0P
(preparation of naphthyridine derivs. as type IV phosphodiesterase inhibitors)

L67 ANSWER [redacted] STN

ACCESSION NUMBER: 90:69725 USPATFULL

TITLE: Acrylic acid morpholides and fungicidal compositions

INVENTOR(S): Kamikado, Toshiya, Hyogo, Japan
Kando, Yasuyuki, Hyogo, Japan
Matsuura, Kazuho, Kyoto, Japan
Yamada, Junji, Nara, Japan

PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd., Osaka, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4954497		19900904
APPLICATION INFO.:	US 1989-310926		19890216 (7)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1988-39130	19880222
	JP 1988-126358	19880524
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Ramsuer, Robert W.	
LEGAL REPRESENTATIVE:	Wegner & Bretschneider	
NUMBER OF CLAIMS:	9	
EXEMPLARY CLAIM:	1,9	
LINE COUNT:	1655	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

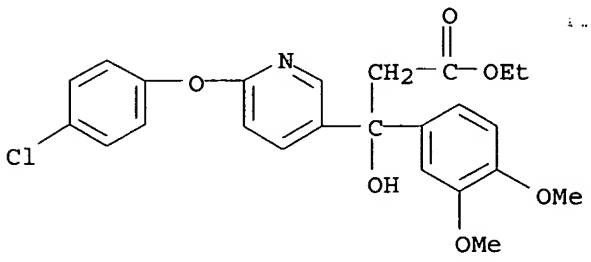
AB This invention relates to a compound of the formula: ##STR1## wherein R.sup.1 is hydrogen, a halogen or a lower alkyl group; R.sup.2 and R.sup.33 independently are a lower alkoxyl group; and Py is an optionally substituted pyridyl group or a salt thereof.

The compound or a salt thereof exerts excellent fungicidal effects against plant disease and is used as fungicide for agricultural use.

IT **125551-43-1P**
(preparation and reaction of, in preparation of agrochem. fungicides)

RN 125551-43-1 USPATFULL

CN 3-Pyridinepropanoic acid, 6-(4-chlorophenoxy)-β-(3,4-dimethoxyphenyl)-β-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



SUMM . . . (Va) is produced by reacting the compound (III) or a salt thereof with the compound (c) in the presence of **zinc**.

SUMM . . . in an amount of about 1 to 10 moles per 1 mole of the compound (III) or a salt thereof. **Zinc** is used in an amount of about 1 to 10 moles per 1 mole of the compound (III) or a. . .

SUMM . . . to accelerate the reaction, catalyst such as Lewis acid exemplified by boron trifluoride, boron trifluoride diethyl ether complex, aluminium trichloride, **zinc** chloride, stannic chloride or titanium chloride may be added to the reaction mixture.

SUMM As the acid, use is made of Lewis acid. Examples of the Lewis acid include **zinc** chloride, **zinc** bromide, ferric chloride, ferric bromide, stannic chloride and antimony chloride. The acid is preferably used in an amount of about. . .

DETD . . . 11 ml of nitrobenzene were dissolved 0.69 g of 2-chloro-5-trichloromethylpyridine and 0.62 g of veratrole, to which 1 g of **zinc** chloride and 0.3 ml of dimethylformamide were added with stirring. After stirring at 70° C. for 12 hours, 10 ml. .

DETD REFERENCE EXAMPLE 8 ##STR35## 0.7 g of **Zinc** powder were suspended in 10 ml of benzene, to which was added 0.1 ml of chlorotrimethylsilane, and the mixture was. . .

IT 122628-37-9P 125551-19-1P 125551-20-4P 125551-21-5P 125551-22-6P
125551-23-7P 125551-24-8P 125551-25-9P 125551-26-0P 125551-27-1P

125551-28-2P 125551-29-3P 125551-30-6P 125551-31-7P 125551-32-8P
125551-33-9P 125551-34-0P 125551-35-1P 125551-36-2P 125551-37-3P
125551-38-4P 125551-39-5P 125551-40-8P 125551-41-9P 125551-42-0P
125551-43-1P 125551-44-2P 125582-02-7P 125582-03-8P
125582-04-9P 125582-05-0P
(preparation and reaction of, in preparation of agrochem. fungicides)

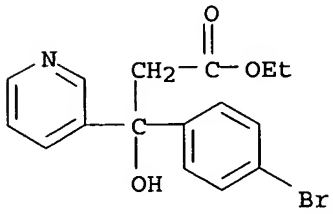
L67 [redacted] STN
ACCESSION NUMBER: 80:5665 USPATFULL
TITLE: Phenyl-pyridylamine derivatives
INVENTOR(S): Carlsson, Per A. E., Goteborg, Sweden
Carnmalm, Bernt S. E., Sodertalje, Sweden
Ross, Vante B., Sodertalje, Sweden
Ulff, Carl B. J., Sodertalje, Sweden
PATENT ASSIGNEE(S): Astra Lakemedel Aktiebolag, Sodertalje, Sweden
(non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4186202		19800129
APPLICATION INFO.:	US 1977-773397		19770302 (5)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1975-632698, filed on 17 Nov 1975, now abandoned

	NUMBER	DATE
P[redacted]		

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Rotman, Alan L.
LEGAL REPRESENTATIVE: Brumbaugh, Graves, Donohue & Raymond
NUMBER OF CLAIMS: 11
EXEMPLARY CLAIM: 4,5
LINE COUNT: 515
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A compound having the formula ##STR1## processes for preparing such a compound, intermediates used in the preparation thereof, and pharmaceutical compositions and a method for the treatment of depression and relief of anxiety employing the same.
IT **60324-61-0P**
(preparation and reactions of)
RN 60324-61-0 USPATFULL
CN 3-Pyridinepropanoic acid, β-(4-bromophenyl)-β-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



DETD Example A ##STR24## A mixture of 4-bromophenyl-3-pyridylketone [CA 66, 37125.sup.h (1967); 50 g, 0.19 moles] and activated **zinc** (20 g) in benzene (100 ml) was heated to reflux. Ethyl bromoacetate (56 g, 0.35 moles) dissolved in benzene (50 ml) was added carefully during 30

minutes. Another portion of **zinc** (50 g) was added and the mixture was refluxed for 14 hours. After cooling and filtration, benzene (300 ml) was. . .

IT **60324-61-0P**
(preparation and reactions of)

=> d iall abeq tech abex 26-27
YOU HAVE REQUESTED DATA FROM FILE 'CASREACT, CHEMINFORMRX, BABS, HCAPLUS, CAOLD, USPATFULL, WPIX' - CONTINUE? (Y)/N:y

L67 [redacted]PYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 2003-289867 [28] WPIX
CROSS REFERENCE: 2004-070989 [07]
DOC. NO. CPI: C2003-075202
TITLE: New indane acetic acid derivatives useful for treating e.g. diabetes and obesity, also new intermediates.
DERWENT CLASS: B02 B03 B05
INVENTOR(S): BULLOCK, W H; COISH, P D; LIVINGSTON, J N; LOWE, D B; MA, X; MUGGE, I A; STOLLE, A; TSUTSUMI, M; WANG, M; WANG, Y; WICKENS, P L; ZHANG, C; ZHANG, H; ZHANG, M; ZHU, L; COISH, P D G; WICKENS, P; LIVINGSTON, J; MUGGE, I Z; MA, Z
PATENT ASSIGNEE(S): (FARB) BAYER CORP; (FARB) BAYER AG; (FARB) BAYER PHARM CORP; (BULL-I) BULLOCK W H; (COIS-I) COISH P D G; (LIVI-I) LIVINGSTON J N; (LOWE-I) LOWE D B; (MAXX-I) MA X; (MUGG-I) MUGGE I A; (STOL-I) STOLLE A; (TSUT-I) TSUTSUMI M; (WANG-I) WANG M; (WANG-I) WANG Y; (WICK-I) WICKENS P L; (ZHAN-I) ZHANG C; (ZHAN-I) ZHANG H; (ZHAN-I) ZHANG M; (ZHUL-I) ZHU L
COUNTRY COUNT: 101
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2003011842	A1	20030213	(200328)*	EN	189	C07D263-32
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW						
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW						
US 2003216391	A1	20031120	(200377)			A61K031-5377
EP 1414809	A1	20040506	(200430)	EN		C07D263-32
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR						
NO 2004000356	A	20040319	(200448)			C07D263-32
KR 2004028950	A	20040403	(200451)			C07D263-32
AU 2002319693	A1	20030217	(200452)			C07D263-32
US 6828335	B2	20041207	(200480)			A61K031-421
CN 1558905	A	20041229	(200523)			C07D263-32
JP 2005508308	W	20050331	(200523)		349	C07D263-32
US 2005075338	A1	20050407	(200525)			C07D417-02
ZA 2004001517	A	20050525	(200540)		193	A61K000-00
IN 2004000258	P1	20050401	(200559)	EN		C07D263-32
BR 2002011502	A	20050920	(200566)			C07D263-32
MX 2004000599	A1	20050301	(200568)			A61K031-421

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
WO 2003011842	A1		WO 2002-US23614	20020725
US 2003216391	A1	Provisional	US 2001-308500P	20010727
		Provisional	US 2002-373048P	20020416
			US 2002-205839	20020725
EP 1414809	A1		EP 2002-750297	20020725
			WO 2002-US23614	20020725
NO 2004000356	A		WO 2002-US23614	20020725
			NO 2004-356	20040126
KR 2004028950	A		KR 2004-701188	20040127
AU 2002319693	A1		AU 2002-319693	20020725
US 6828335	B2	Provisional	US 2001-308500P	20010727
		Provisional	US 2002-373048P	20020416
			US 2002-205839	20020725
CN 1558905	A		CN 2002-818676	20020725
JP 2005508308	W		WO 2002-US23614	20020725
			JP 2003-517034	20020725
US 2005075338	A1	Provisional	US 2001-308500P	20010727
		Provisional	US 2002-373048P	20020416
		Cont of	US 2002-205839	20020725
			US 2004-949119	20040922
ZA 2004001517	A		ZA 2004-1517	20040225
IN 2004000258	P1		WO 2002-US23614	20020725
			IN 2004-DN258	20040205
BR 2002011502	A		BR 2002-11502	20020725
			WO 2002-US23614	20020725
MX 2004000599	A1		WO 2002-US23614	20020725
			MX 2004-599	20040120

FILING DETAILS:

PATENT NO	KIND		PATENT NO
EP 1414809	A1	Based on	WO 2003011842
AU 2002319693	A1	Based on	WO 2003011842
JP 2005508308	W	Based on	WO 2003011842
US 2005075338	A1	Cont of	US 6828335
BR 2002011502	A	Based on	WO 2003011842
MX 2004000599	A1	Based on	WO 2003011842

PRIORITY APPLN. INFO: [redacted] 20020416; US 20010727; US 20020725; US 20040922

INT. PATENT CLASSIF.:

MAIN: A61K000-00; A61K031-421; A61K031-5377; C07D263-32; C07D417-02

SECONDARY: A61K031-155; A61K031-422; A61K031-426; A61K031-427; A61K031-4439; A61K031-454; A61K031-496; A61K031-497; A61K031-506; A61K031-541; A61K031-64; A61K038-28; A61K045-00; A61P003-04; A61P003-06; A61P003-10; A61P005-24; A61P009-00; A61P009-10; A61P009-12; A61P009-14; A61P015-00; A61P017-02; A61P029-00; A61P035-00; A61P037-06; A61P039-06; A61P043-00; C07C059-72; C07C069-732; C07C069-734; C07C069-736; C07C237-36; C07D277-20; C07D277-24; C07D277-28;

C07D277-30; C07D413-02; C07D413-04; C07D413-10;
C07D413-12; C07D417-04; C12Q001-02

BASIC ABSTRACT:

WO2003011842 A UPAB: 20051024

NOVELTY - Indane acetic acid derivatives (I)-(III) are new.

DETAILED DESCRIPTION - Indane acetic acid derivatives of formula (I), their salts and esters, are new.

R = H or 1-6C alkyl;

R1 = H, COOR, 3-8C cycloalkyl, or 1-6C alkyl, 1-6C alkoxy or 2-6C alkenyl (all optionally substituted by F, methylenedioxyphenyl or phenyl (optionally substituted by R6));

R2 = H, halo or 1-6C alkyl (optionally substituted by 1-6C alkoxy, oxo or F), or phenyl, furyl, thienyl, pyrrolyl, oxazolyl, thiazolyl, imidazolyl, pyrazolyl, isoxazolyl, isothiazolyl, triazolyl, oxadiazolyl, thiadiazolyl, tetrazolyl, pyridyl, pyrrolidinyl, piperidinyl, tetrahydro(thio)pyranyl, piperazinyl or morpholinyl (all optionally substituted by R6);

R3 = H, 1-6C alkyl or phenyl (optionally substituted by R6);

X = O or S;

R4 = 1-6C alkyl or 3-8C cycloalkyl (both optionally substituted by F, oxo or 1-6C alkoxy (optionally substituted by 1-6C alkoxy or phenyl, optionally substituted by R6), or by Q (optionally substituted by R6), and 1-6C alkyl is also optionally substituted by 3-8C cycloalkyl, phenoxy (optionally substituted by R6) or by Q (optionally substituted by R6)) or Q (optionally substituted by R6, R2, benzodioxolyl, dihydrobenzofuranyl, indolyl, pyrimidinyl or phenoxy (all optionally substituted by R6));

Q = phenyl, napthyl, furyl, tetrahydrofuryl, naphthyl, tetrahydrothienyl, pyrrolyl, pyrrolinyl, pyrrolidinyl, oxazolyl, thiazolyl, imidazolyl, pyrazolyl, isoxazolyl, isothiazolyl, triazolyl, oxadiazolyl, thiadiazolyl, tetrazolyl, pyridyl, piperidinyl, tetrahydropyranyl, tetrahydrothiopyranyl, pyrimidinyl, pyrazinyl, piperazinyl, morpholinyl, benzofuranyl, dihydrobenzofuranyl, benzothienyl, dihydrobenzothienyl, indolyl, indolinyl, indazolyl, benzoxazolyl, benzothiazolyl, benzimidazolyl, benzisoxazlyl, benzisothiazolyl, benzodioxolyl, quinolyl, isoquinolyl, quinazolinyl, quinoxazolinyl, dihydropyranyl, dihydrobenzothiopyranyl or 1,4-benzodioxanyl;

R5 = H, halo or 1-6C alkyl (optionally substituted by oxo), and

R6 = halo, CF3, 1-6C alkyl (optionally substituted by oxo or OH) or 1-6C alkoxy (optionally substituted by F).

. INDEPENDENT CLAIMS are also included for the following:

(1) new intermediate compounds of formula (II) and (III);

(2) preparation of indane acetic acid compounds of formula (V) which comprises stereospecific hydrogenation of an acid compound of formula (IV) in the presence of a hydrogen source and catalyst, and

(3) identifying compounds for treatment of diabetes, or related disorders, obesity and atherosclerotic disease by determining their insulin-sensitizing activity.

R7 = H, 1-6C alkyl (optionally substituted by phenyl or oxo), tri(1-6C)alkylsilyl, arylalkylsilyl, COR8, COOR8 or a group of formula (i);

R8 = 1-6C alkyl or phenyl (optionally substituted by 1-6C alkyl, halo or NO2);

R7a = H, 1-6C alkyl (optionally substituted by phenyl or oxo), tri(1-6C)alkylsilyl, arylalkylsilyl, COR8 or COOR8;

R9 = methoxy optionally substituted by F, 2-6C alkoxy, 1-6C alkyl or 4-8C cycloalkyl (all optionally substituted by fluoro, methylenedioxyphenyl or phenyl optionally substituted by R13);

R10 = H, F, methyl optionally substituted by fluoro, oxo, or 2-6C alkyl (optionally substituted by 1-6C alkoxy, oxo, F or by R2 (optionally substituted by R13)) or R2 (optionally substituted by R12);

R11 = halo or 1-6C alkyl (optionally substituted by oxo);
R12 = H, methyl (optionally substituted by fluoro or oxo), 2-6C alkyl (optionally substituted by F, oxo or phenyl), tri(1-6C)alkyl, arylalkylsilyl, COR14, COOR14 or a group of formula (ii);
R13 = F, CF3, 1-6C alkyl (optionally substituted by OH or oxo), or 1-6C alkoxy (optionally substituted by F);
R14 = 1-6C alkyl or phenyl (optionally substituted by 1-6C alkyl or F);
R15 = H, 1-6C alkyl or phenyl substituted by R13, and
R16 = methyl (optionally substituted by F, oxo or Q (optionally substituted by R13), 4-8C cycloalkyl or 2-6C alkyl (both optionally substituted by F, methoxy, 2-6C alkoxy optionally substituted by phenyl, 1-6C alkoxy, oxo or Q optionally substituted by R13), 2-6C alkyl (optionally substituted by 4-8C cycloalkyl or phenoxy optionally substituted by R6 or Q (optionally substituted by R13)), or Q (optionally substituted by R13).

ACTIVITY - Antidiabetic; Antilipemic; Anorectic; Antiarteriosclerotic; Cardiant; Cerebroprotective; Dermatological; Immunosuppressive; Gynecological; Cytostatic; Hypotensive.

Tests are described, but no results are given.

MECHANISM OF ACTION - None given in the source material.

USE - Used for treating diabetes and related conditions such as hyperglycemia, hyperinsulinemia, impaired glucose tolerance and fasting glucose levels, dyslipidemia, hypertriglyceridemia and insulin resistance, syndrome X, obesity, cardiovascular disease (atherosclerosis, hypertension, coronary heart/artery disease), cerebrovascular or peripheral vascular disease, lupus, polycystic ovarian syndrome, carcinogenesis and hyperplasia.

Dwg.0/0

FILE SEGMENT: CPI
FIELD AVAILABILITY: AB; GI; DCN
MANUAL CODES: CPI: B05-B01B; B06-H; B07-E01; B07-F01; B07-H04; B10-A11B; B10-C04B; B10-F02; B10-G02; B14-E12; B14-S04

TECH UPTX: 20031125

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preparation: Preparation of (I) comprises e.g. Mitsunobu coupling of an alcohol compound of formula (VI) with a hydroxyindane compound of formula (VII) in the presence of an azodicarboxylate reagent and a phosphine.

Starting Materials: Preparation of (II) comprises Reformatsky [redacted] formula (VIII) [redacted]

Preparation of (III) comprises hydrogenating (II) in the presence of catalyst and base.

Preferred Method: Preparation of (V) is stereospecific hydrogenation of (IV) in the presence of base and transition metal catalyst, preferably under 20-100 psi hydrogen. Diastereomeric salts of (IV) are separated using e.g. quinine as resolving agent, and (IV) is liberated and hydrogenated or (IV) is hydrogenated and the diastereoisomers are resolved.

TECHNOLOGY FOCUS - BIOLOGY - Preferred Method: The method (3) also comprises culturing cells, especially of the 3T3-L1 cell line, for 2-4 days past confluence, treating with differentiation media, preferqably containing insulin-like growth factor-1 and test compounds, and analyzing for insulin-receptor binding activity.

ABEX UPTX: 20031125

SPECIFIC COMPOUNDS - 102 Compounds (I) are specifically claimed e.g: (5-(2-(2-(4-ethyl-phenyl)-5-methyl-oxazol-4-yl)-ethoxy)-indan-1-yl)-acetic acid (Ib).

ADMINISTRATION - The dosage is 0.001-200 (preferably 0.01-200) mg/kg/day by injection, rectally, transdermally or orally.
Administration is optionally in combination with other hypoglycemic agents, e.g. insulin (or its secretagogs), biguanides, sulfonylureas, alpha-glycosidase inhibitors or agonists of beta3-adrenoreceptors or an inhibitor of 3-hydroxy-3-methyl-glutaryl coenzyme A reductase, bile acid binding agent, fibric acid derivative, antihypertensive or agent that regulates body weight.

EXAMPLE - Methyl (2S)-2-((1S)-5-hydroxy-2,3-dihydro-1H-inden-1-yl)butanoate (208 g) and 2-(5-methyl-2-(4-methylphenyl)-1,3-oxazol-4-yl) ethanol (212 g) were worked up in the presence of 1,1'-(azodicarbonyl)piperidine and triphenylphosphine to give methyl (2S)-2-((1S)-5-(2-(5-methyl-2-(2-(4-methylphenyl)-1,3-oxazol-4yl)ethoxy)-2,3-hydro-1H-inden-1-yl)-butanoate (358 g; 93%).

L67 [redacted]GHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1993-188538 [23] WPIX
DOC. NO. CPI: C1993-083509
TITLE: 5-Hydroxy-2-pyrimidinyl methylene oxaza heterocycle for 5-lipoxygenase inhibitor - prepared by **reformatsky** reacting 5-hydroxy pyrimidine 2-aldehyde with heterocyclic alpha halocarbon cpd. in **zinc** , and dehydrating for cyclo oxygenase inhibition.
DERWENT CLASS: B03
INVENTOR(S): CONNOR, D T; KOSTLAN, C R; SHRUM, G P; UNANGST, P C
PATENT ASSIGNEE(S): (WARN) WARNER LAMBERT CO
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
US 5215986	A	19930601	(199323)*		8	A61K031-535

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 5215986	A	US 1992-891611	19920601

PR[redacted]
INT. PATENT CLASSIF.:
MAIN: A61K031-535
SECONDARY: A61K031-505; A61K031-55; C07D239-02; C07D265-00
BASIC ABSTRACT:
US 5215986 A UPAB: 19931115
Cpds of formula (I), and salts, are new.
n = 1-3; R1 and R2 are H or 1-7C alkyl; and R3=H, 1-7C alkyl, 2-5C alkenyl or 3-6C cycloalkyl.
Pref cpd. is (E)-4((4,6-bis(1,1-dimethylethyl)-5-hydroxy-2-pyrimidinyl methylene)tetrahydro-2-methyl-2H-1,2- oxazin-3-one.
USE/ADVANTAGE - As inhibitors of 5-lipoxygenase and/or cycloxygenase and are useful in treating inflammatory diseases.
In an example, a mixture of 4((4,6-bis(1,1-dimethylethyl)-5-hydroxy-2-pyrimidonyl)hydroxynethyl) -tetrahydro-2-methyl-2H-1,2-oxazin-3-one (0.70g) and p-toluensulphonic acid monohydrate (0.040g) in toluene (15ml) was stirred at reflux/or 18hrs. The mixture was evaporated and the residue purified by flash chromatography to yield

(E)-4-((4,6-bis(1,1-dimethylethyl)-5- hydroxy-2-pyrimidinyl)methylene, tetrahydro-2-methyl,2H-1,2- oxazin-3-one (0.20g, 31%, m.pt. 180-181 deg.C).

In ARBL/ARBC whole cell 5-lipoxygenase and cycloxygenase assays, the above prod showed 84% inhibition at 10 micro M concentration for ARBL and 88% inhibition at 10 microM for ARBC.

Dwg.0/0

FILE SEGMENT: CPI
FIELD AVAILABILITY: AB; DCN
MANUAL CODES: CPI: B07-D12; B12-D07; B12-G01B1

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=> d his l65

     (FILE 'HCAPLUS, BIOSIS, MEDLINE, EMBASE, CANCERLIT, PASCAL, JICST-EPLUS,
     SCISEARCH, WPIX, CONF, CONFSCI, DISSABS' ENTERED AT 09:59:38 ON 03 NOV
     2005)
L65             5 S L63 OR L64

=> d que l65
L54          3379 SEA YAMANO, T?/AU
L55           261 SEA TAYA, N?/AU
L56           116 SEA OJIDA, A?/AU
L57            64 SEA (L54 OR L55 OR L56) AND (ZN? OR ?ZINC? OR ?ORGANOZINC? OR
                  ?HALOZINC? OR ?BROMOZINC? OR ?FLUOROZINC? OR ?CHLOROZINC? OR
                  ?IODOZINC?)
L58             6 SEA (L54 OR L55 OR L56) AND ?REFORMATSK?
L59            68 SEA (L57 OR L58)
L60            43 DUP REM L59 (25 DUPLICATES REMOVED)
L61             2 SEA L60 AND (?STEREO? OR ?ENANTIO?)
L62             6 SEA L58 OR L61
L63             4 DUP REM L62 (2 DUPLICATES REMOVED)
L64             5 SEA L60 AND ?TAKED?/PA,CS,SO
L65             5 SEA L63 OR L64


=> d ibib ed ab l65 1-5
YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS, SCISEARCH' - CONTINUE? (Y)/N:y


L65 [redacted]YRIGHT 2005 ACS on STN
ACCESSION NUMBER:          2003:719450  HCAPLUS
DOCUMENT NUMBER:           139:245905
TITLE:                     Process for preparation of optically active
                           β-hydroxy esters
INVENTOR(S):               Yamano, Toru; Taya, Naohiro;
                           Ojida, Akio
PATENT ASSIGNEE(S):        Takeda Chemical Industries, Ltd., Japan
SOURCE:                    PCT Int. Appl., 40 pp.
                           CODEN: PIXXD2
DOCUMENT TYPE:             Patent
LANGUAGE:                  Japanese
FAMILY ACC. NUM. COUNT:    1
PATENT INFORMATION:

     PATENT NO.            KIND   DATE        APPLICATION NO.          DATE
     ---------------       ----   --------    --------------------     --------
     WO 2003074487          A1    20030912    WO 2003-JP2563           20030305
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS,
             LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL,
             PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA,
             UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
             FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     CA 2478485             AA    20030912    CA 2003-2478485          20030305
     JP 2003327577          A2    20031119    JP 2003-58506            20030305
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EP 1489070 A1 20041222 EP 2003-708491 20030305
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
US 2005107433 A1 20050519 US 2003-506309 20030305
[redacted] A 20020306
[redacted] W 20030305
OTHER SOURCE(S): MARPAT 139:245905
ED Entered STN: 14 Sep 2003
AB This invention pertains to a method for producing optically active β-hydroxy esters represented by the general formula of HO-C(R1R2)-C(R4R5)-CO2R3 [wherein R1 = H, (un)substituted hydrocarbyl, or heterocyclyl; R2 = (un)substituted heterocyclyl; R3 = (un)substituted hydrocarbyl or heterocyclyl; R4 and R5 = independently H, halo, (un)substituted silyl, hydrocarbyl, or heterocyclyl], characterized by reacting R1COR2 with X-**Zn**-C(R4R5)-CO2R3 [where X= halo] in the presence of a cinchona alkaloid. For example, 2-benzoylpyridine was reacted with a **Reformatskii** reagent in THF in the presence of cinchonine and pyridine to give 3-hydroxy-3-phenyl-3-(pyridin-2-yl)propionic acid tert-Bu ester (98%) with 90% e.e. This invention provides a method to make optically active β-hydroxy esters in high yield with high e.e.
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L65 [redacted] COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:285637 HCAPLUS
DOCUMENT NUMBER: 140:8509
TITLE: Chiral technology in medicine product formulation
AUTHOR(S): **Yamano, Toru**
CORPORATE SOURCE: Dep. of Drugs, **Takeda** Chemical Industries, Ltd., Japan
SOURCE: Fain Kemikaru [redacted]2(5), 9-15
CODEN: FNKMAU; ISSN: 0913-6150
PUBLISHER: Shi Emu Shi Shuppan
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
ED Entered STN: 14 Apr 2003
AB A review on chiral technol., e.g. optical resolution and asym. synthesis, in production of chiral drugs, covering synthesis of intermediates for production of an anti-diabetic agent (a 2,4-oxazolidinedione derivative) and a hypnotic agent (TAK-375) as examples. Asym. hydrogenation, asym. **Reformatsky** reaction, and optical resolution by using lipase are also discussed.

L65 [redacted] RIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:576071 HCAPLUS
DOCUMENT NUMBER: 137:262610
TITLE: Highly **Enantioselective Reformatskii** Reaction of Ketones: Chelation-Assisted **Enantioface** Discrimination
AUTHOR(S): **Ojida, Akio**; **Yamano, Toru**; **Taya, Naohiro**; Tasaka, Akihiro
CORPORATE SOURCE: Medicinal Chemistry Research Laboratories, **Takeda** Chemical Industries, Ltd., Osaka, 532-8686, Japan
SOURCE: Organic Letters [redacted](18), 3051-3054
CODEN: ORLEF7; ISSN: 1523-7060
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal

LANGUAGE: English
OTHER SOURCE(S): CASREACT 137:262610
ED Entered STN: 04 Aug 2002
AB Highly **enantioselective Reformatskii** reaction of ketones was accomplished using cinchona alkaloids as chiral ligands. Chelation with the sp2-nitrogen adjacent to the reactive carbonyl center contributed to the **enantioface** discrimination for the high **enantioselectivities.**
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L65 [redacted]PYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1972:21959 HCAPLUS
DOCUMENT NUMBER: 76:21959
TITLE: Germicide composition for silk worms
INVENTOR(S): Imanishi, Kosaku; **Yamano, Togo**
PATENT ASSIGNEE(S): **Takeda Chemical Industries, Ltd.**
SOURCE: Jpn. Tokkyo Koho, 4 pp.
CODEN: JAXXAD
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 46028429	B4	19710818	[redacted]	[redacted]

ED Entered STN: 12 May 1984
AB **Zinc** ethylenebis(dithiocarbamate) (I) [12122-67-7], manganese ethylenebis(dithiocarbamate) [12427-38-2], or a mixture of them with salicyclic acid (II) [69-72-7] (e.g. as dust containing 1% of either salt and 2% II) was effective in protecting silkworms from infection by Aspergillus oryzae, Beauveria bassiana, or Isaria farinosa.

L65 [redacted]YRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 2004:508757 SCISEARCH
THE GENUINE ARTICLE: 822TT
TITLE: **Stereocontrolled** synthesis of (1S)-1-(1H-imidazol-4-yl)1-(6-methoxy-2-naphthyl)-2-methylpropan-1-ol as a potent C-17,C-20-lyase inhibitor
AUTHOR: **Ojida A**; Matsunaga N (Reprint); Kaku T; Tasaka A
CORPORATE SOURCE: **Takeda Chem Ind Ltd, Div Pharmaceut Res, Med Chem Res Labs, Yodogawa Ku, 17-85 Jusohonmachi 2 Chome, Osaka 5328686, Japan (Reprint); Takeda Chem Ind Ltd, Div Pharmaceut Res, Med Chem Res Labs, Yodogawa Ku, Osaka 5328686, Japan**
matsunaga-nobuyuki@**takeda**.co.jp
COUNTRY OF AUTHOR: Japan
SOURCE: TETRAHEDRON-ASYMMETRY, [redacted]ol. 15, No. 10, pp. 1555-1559.
ISSN: 0957-4166.
PUBLISHER: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 17
ENTRY DATE: Entered STN: 18 Jun 2004
Last Updated on STN: 18 Jun 2004
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

ED Entered STN: 18 Jun 2004
Last Updated on STN: 18 Jun 2004
AB An efficient **stereocontrolled** synthesis of the Potent C-17.20-lyase inhibitor, (1S)-1-(1H-imidazol-4-yl)-1-(6-methoxy-2-naphthyl)-2-methyl-1-propanol 1, has been established. The **stereogenic** center of 1 was successfully constructed by a highly **diastereoselective** Grignard reaction of 2, while a subsequent imidazole ring annulation afforded 1 in an **enantiomerically** pure form. The procedure enables a practical synthesis of 1 that can be conveniently carried out on a multigram scale.

=> file stnguide
FILE 'STNGUIDE' ENTERED AT 10:25:31 ON 03 NOV 2005

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Oct 28, 2005 (20051028/UP).

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